A LONG-TERM VISION FOR THE FUTURE OF WATER SUPPLY IN KANSAS

Developed based upon input from the citizens of Kansas

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CALL TO ACTION: PURPOSE AND NEED FOR A LONG TERM VISION FOR THE FUTURE OF WATER SUPPLY IN KANSAS

Looking back through history, specific generations have become known for key achievements, traits and ideals. Stereotypes are broadly applied across the United States but what about us? What will this generation of Kansans be remembered for? It could be for putting personal politics and differences aside, rolling up our sleeves and working together to ensure future generations of Kansans have a reliable source of water to fuel our state's economy.

In October 2013, Governor Brownback issued a call to action to his Administration to develop a 50-Year Vision for the Future of Water in Kansas stating, "Water and the Kansas economy are directly linked. Water is a finite resource and without further planning and action we will no longer be able to meet our state's current needs, let alone growth."

> *"Water and the Kansas economy are directly linked. Water is a finite resource and without further planning and action we will no longer be able to meet our state's current needs, let along growth."* ***– Governor Sam Brownback***

The writing is on the wall and if we don't act today, our future is bleak. The Ogallala Aquifer is declining faster than it is recharging. Reservoirs, which are critical water storage structures for much of our state, are filling with sediment. At this rate, with no changes in the next 50 years, the Ogallala will be 70 percent depleted and our reservoirs will be 40 percent filled with sediment.

The multi-year drought has brought water issues to the forefront; we must plan for the future now.

Since issuing the call to action in October, a Vision Team comprised of the Kansas Water Office, Kansas Department of Agriculture and Kansas Water Authority, embarked on a one-year mission to seek input from water users, compile data, conduct research and chart a path forward.

Governor Brownback's Administration, and most importantly the citizens of Kansas, have responded to his call to action and have developed a Vision to ensure a reliable future water supply. If we remain united and committed to implementing the strategies defined in this Vision, future generations will look back on the work we do and say that's the generation of Kansans who worked together to protect and conserve the state's water resources today and for the future.

SUMMARY OF VISION DEVELOPMENT PROCESS

Following is a summary of the year-long process employed to develop the Vision.

STATE OF THE RESOURCE

Measuring progress towards meeting the Vision requires a firm understanding of the current conditions of the state's water resources. A brief overview of the current conditions of our state's water resources and a description of how water is used and managed in the state is included below. Supporting graphics and maps are provided in the Condition Atlas at the end of this document.

Kansans use approximately four million acre-feet of water annually. Statewide, irrigation is the largest water user, accounting for 80-85 percent of all water diverted in most years. Municipal use is the second largest water use category. Approximately 90 percent of all water used in Kansas is pumped from ground water sources.

Kansas water resources are ground water dominated in the western half of the state and surface water dominated in the eastern half. Climate is a significant factor in this variability, with semi-arid conditions, low precipitation and limited surface water in western Kansas. There are aquifers in eastern Kansas; however, they are generally more limited in extent and yield than the aquifers in western Kansas.

Both weather and climate exhibit a great deal of variability in Kansas. This may be the case over several days, from year-to-year and over a multi-year period. Perhaps the most striking example of this variability is the periodic recurrence of drought conditions in Kansas. Due diligence in protecting water resources and adapting to future climate variability will be important to maintaining and improving quality of life and the state's economy.

State policy regarding water management is guided by the Water Appropriation Act which asserts that water in Kansas is dedicated to the use of the people of the state, with the state charged to manage the system of water rights. As such, surface and ground water can be appropriated for beneficial use, without waste, if that does not cause impairment of an existing, more senior water right and does not unreasonably affect the public interest. A water right does not constitute ownership of such water, only the right to use it for beneficial purposes. The date of a water right, and not the type of use, determines the priority to divert and use water at any time when supply is not sufficient to satisfy all water rights. In addition, Kansas has four Native American Tribes. Each is afforded a Tribal Reserve Water Right by the federal government, which is linked to the creation of each tribal reservation. Although none of these rights have currently been quantified, the future management and use of our water resources must take into account these rights, which are likely to have the most seniority in the state.

The *Kansas Water Plan* is one of the primary tools used by the State of Kansas to address current water resource issues for future needs. The Kansas Water Office, in coordination with local, state, federal and interstate partners updates the Kansas Water Plan every 5-years. Water resource issues addressed in the Kansas Water Plan extend beyond water supply and include goals and priorities such as improving our state's water quality and improving recreational opportunities available to our citizens. The Kansas Water Plan will serve as the implementation plan for the Vision, providing 5-year milestone events to measure success towards achieving the Vision.

HIGH PLAINS AQUIFER

The High Plains aquifer underlies the western and south central portions of Kansas. It is one of the world's largest aquifers and underlies portions of eight states from South Dakota to Texas and New Mexico. About 27 percent of the irrigated cropland in the United States overlies the High Plains aquifer. In Kansas, the aquifer consists of the hydraulically interconnected Ogallala aquifer in the west, the shallower and geologically younger Great Bend Prairie and the Equus Beds aquifers in south central Kansas and the associated alluvial aquifers.

The Ogallala portion of the High Plains aquifer is the primary source of water in western Kansas for all uses and is heavily developed, primarily for irrigation. Most of the Ogallala-High Plains aquifer is closed to or restricted from additional development. The aquifer has been over-appropriated in many regions and, in localized areas, water quality is deteriorating. Projections of how many more years the aquifer will support a particular level of withdrawal indicates many large areas that have 50 years or less at current usage rates.

Recognizing that the High Plains aquifer is the largest, most economically important ground water source in Kansas, many programs, policies and individual management decisions have been directed towards conserving and extending the useable life of this resource. Examples of such activities include the development of Local Enhanced Management Areas (LEMAs), establishment of water banks, increased compliance and enforcement and implementation of various water conservation programs such as the Water Transition Assistance Program (WTAP) and Conservation Reserve Enhancement Program (CREP).

The Groundwater Management Act (GMD) Act, enacted in 1972, provided five locally developed GMDs the flexibility to adopt management practices based on local hydrologic conditions. The purpose of the Act was to preserve basic water law doctrine as established by the Water Appropriation Act while establishing the right and responsibility of local water users to determine their future with respect to ground water use.

RIVER-RESERVOIR SYSTEMS

Kansas has several major rivers, but few natural lakes. Many reservoirs, large and small, have been constructed to control flooding and store water for beneficial use. Major rivers in Kansas include the Arkansas, Kansas and Neosho. The state's largest river, the Missouri River, forms the northeast border and provides significant potential for addressing Kansas' future water demands. Twenty-four large reservoirs were constructed by the federal government in Kansas, the oldest being Kanopolis (1948) and the youngest three being El Dorado, Big Hill and Hillsdale (1981). The primary authorized purpose for reservoirs built by the U.S. Army Corps of Engineers (Corps) at the time of their construction was flood control. Irrigation water supply along with flood control was a primary use for those reservoirs constructed by the U.S. Bureau of Reclamation. Other authorized uses, which vary by reservoir, include municipal and industrial water supply, water quality, recreation and navigation support.

Kansas has purchased water supply storage in 14 federal reservoirs. Water from this storage is accessible via contract for municipal, industrial and irrigation use. These reservoirs are an important source of water supply in Kansas, providing water in some manner to approximately two-thirds of the citizens of the state. Nearly 60 percent of the energy produced in Kansas relies on storage in our reservoirs. The state's population growth projections indicate Kansans will be increasingly reliant on the reservoirs.

There are many challenges to managing reservoir supplies, such as: protecting the reservoirs from losing storage from sedimentation, identifying a method to pay for additional storage as well as operation and maintenance costs, increasing storage at key reservoirs to regain storage already lost to sedimentation and reducing or eliminating the Corps releases of water from Kansas River reservoirs to support navigation on the Missouri River. This is a practice of marginal benefit to the nation and detrimental to Kansas interests. Actions currently underway to secure, protect and restore reservoir water supply include watershed restoration and protection activities such as streambank stabilization, reallocation of storage and removal of sediment through dredging.

VISION STATEMENT

Vision:

Kansans *act on a shared commitment to have the water resources necessary to support the* ***state's social, economic and natural resource*** *needs for* ***current and future generations****.*

- At every point in the Vision development process, the Water Vision Team has been reminded the key to a reliable, long-term water supply is rooted in every Kansan understanding the importance of the state's water resources.
- The Vision statement calls on every Kansan, as stakeholders, to not only commit to ensuring a reliable water supply but also to act on that commitment.
- The Vision attempts to make clear water is necessary for human health and welfare as well as environmental stewardship and our economic well-being.
- The Vision is also based on the concept that water is not only important for today but also for our future as a state.

MISSION STATEMENT

Mission:

Provide Kansans *with the framework, policy and tools,* ***developed in concert with stakeholders****, to manage, secure and protect a reliable, long term statewide water supply while balancing conservation with economic growth.*

Since the Vision calls on all Kansans to be committed to their water resources, the state of Kansas is called on in the mission to provide Kansans everything they need to act on that commitment.

GUIDING PRINCIPLES

Following are four guiding principles that directed the development of the Vision document. These guiding principles will continue to serve as precepts for the implementation of the action items.

1. Locally driven solutions have the highest opportunity for long term success. Therefore, the intentional focus of the action items presented in the Vision are to provide the necessary tools and support to allow for greater flexibility and management of water resources at the local level.

2. Policies and programs should not unintentionally penalize those who have already demonstrated good stewardship with the state's water resources.

3. Voluntary, incentive and market-based water conservation and land management activities are the preferred tools for ensuring a reliable statewide water supply.

4. Action is necessary now to ensure a reliable supply into the future.

IMMEDIATE PRIORITY ACTION ITEMS

During the development of the Vision, two action items rose to the top as critical activities necessary to ensure the successful implementation of all other actions in all theme areas. The following action items will be initiated immediately:

1. Improve coordination on water related issues with the state's primary water related agencies through the **creation of the Governor's Water Resources Subcabinet** at the Executive level with additional regular agency collaboration to implement joint activities.

2. Establish a Blue Ribbon Funding Task Force to develop a balanced, affordable and sustainable method to provide financing for water resource management and protection, including alternatives that utilize public and private partnerships.

NEED FOR LEADERSHIP

In order to accomplish the Vision, Mission, Goals and Strategies, leadership is necessary at every step in the process.

The best strategic plans are not likely to be successful if they are not carefully developed and effectively communicated to those with the power to implement them. Implementing the Vision will require leadership and cooperation with stakeholders across the state and the diligence to make the correct choices and wise investments in our state's water resources. Providing a reliable water supply for Kansas will be a big challenge in the years ahead, but if stakeholders work together to implement the strategies and recommendations described in the Vision, future generations of Kansans will have water for tomorrow.

KEYS TO SUCCESS

Keys to successful implementation of the Vision include:

1. Clear definition of the resource conditions and issues.

2. Agreement among the majority of stakeholders on the goals Kansas and its citizens are trying to achieve. The goal setting process in this document calls upon Kansans to meet, discuss and determine the goals for their region. The leadership of the Kansas Water Authority is critical to the development of these goals and must hold stakeholders accountable in meeting them.

3. While goals are important and the appropriate tools need to be readily available, stakeholders need to have the flexibility and freedom to meet the goals and use the tools.

4. Review and evaluate progress toward achieving the Vision in a timely manner to determine if further action is needed.

5. Leadership at the local level is the most critical. Local decision makers must listen to their constituents while at the same time balancing the future needs of their communities.

THEMES AND STRATEGIES TO ACHIEVE THE VISION

This section includes the themes, strategies and action items identified during the vision development process.

EXPLANATION OF SECTION

Following are a series of actions and strategies designed to achieve the vision, mission and regional goals.

The strategies are arranged in four themes:

- Water conservation
- Water management
- Technology and crop varieties and
- Additional sources of supply

Within each theme, three to five specific strategies are identified.

While many strategies are applicable to the whole state, some are specific to one or more distinct regions. Each action item is categorized into one of four applicable regions:

- Statewide
- Ogallala-High Plains Aquifer
- Reservoirs or
- Other Regions

For example, an action item in the Water Management theme recommending assessment of the Kansas River alluvial aquifer is unique to northeast Kansas and is therefore characterized as an "Other Regions Action Item."

Within each strategy, action items are identified and categorized in Phases according to the priority for implementation.

- Phase I action items are the highest priority and will be initiated, but not necessarily completed, during the first year of this draft of the Vision
- Phase II action items will be initiated within five years
- Phase III action items are longer-term and may require additional research, development and stakeholder coordination before the action item can be initiated

WATER CONSERVATION

- Strategically emphasize information and education regarding the importance of water and water conservation practices
- Implement additional or enhanced water conservation policies and practices
- Reduce barriers and increase development of locally driven conservation and management plans
- Encourage conservation planning in economic development and business recruitment
- Increase adoption of watershed practices that reduce future water supply loss

WATER MANAGEMENT

- Modify reservoir operations and downstream targets to most efficiently operate reservoirs for water supply
- Improve interstate cooperation so that Kansans' water needs are met and protected
- Increase the regionalization of water supply to improve long-term water supply reliability
- Evaluate changes to the Kansas Water Appropriation Act and Rules and Regulations to promote better balance between efficient water use and economic benefit
- Evaluate and improve state agency coordination and collaboration

TECHNOLOGIES AND CROP VARIETIES

- Promote irrigation efficiency technologies
- Increase utilization of less water intensive crop varieties
- Implement research-based technology aimed at better understanding our state's water supply
- Develop career and technical education programming related to water resource management and technology to build the needed workforce

ADDITIONAL SOURCES OF SUPPLY

- Restore water supply lost to sedimentation through dredging and other in-lake sediment management techniques
- Allow for the transfer of water supplies between basins where feasible and cost effective
- Evaluate the sources and potential uses of lower quality water
- Secure all available storage at federal reservoirs including reallocating storage where such actions are possible
- Increase other sources of available storage for water supply

STRATEGICALLY EMPHASIZE INFORMATION AND EDUCATION REGARDING THE IMPORTANCE OF WATER AND WATER CONSERVATION PRACTICES

STATEWIDE ACTION ITEMS

PHASE I

1. Appoint a task force to develop a multi-phased educational proposal for target audiences of K-12, community leaders and media to promote local conservation decisions. Existing educational efforts, programs and activities should be incorporated as appropriate. Ideas to be considered by the task force include:

    - Develop a Best Management Practice (BMP) conservation guide for communities building on existing resources and success stories

    - Implement community facilitation programs, with partners like K-State Research and Extension (KSRE), to develop ownership for local conservation decisions

    - Design and implement a statewide curriculum for K-12 on water conservation, building on current resources and knowledge such as Project WET and integrate water conservation into science curriculum, by working with partners such as the Kansas Association of Conservation and Environmental Education (KACEE) and the Kansas Department of Education

    - Develop additional activities within youth and adult organizations such as 4-H and the KSRE system to educate others and promote youth activities related to water conservation

2. Conduct drought simulation exercises to educate the public and identify gaps in conservation efforts

    - Incorporate drought simulation efforts into state hazard planning and seek funding and support for efforts from partners such as the U.S. Department of Homeland Security (DHS), National Integrated Drought Information System (NIDIS) and National Oceanic and Atmospheric Administration (NOAA)

3. Create a long-term commitment to water conservation education by designating responsibility for water conservation public information and outreach within agencies of the Water Resources Sub-Cabinet

    - Develop continual media plans and message maps related to water conservation and the importance of local engagement to be implemented by multiple partners through all aspects of traditional paid, earned and social media

4. Provide greater information and decision making tools to evaluate the economic impacts, both short-term and long-term, of reduced water use

5. Enhance educational programming specifically for state legislators as well as other state officials, the Congressional delegation and local policy makers

6. Develop a proposal for a program to provide Extension Groundwater Specialists, to be located in western Kansas, to help water users develop and implement management strategies that will lead to enhanced water management and long term sustainability of the economy in western Kansas. This program would be modeled after the extension Watershed Specialist program.

PHASE II

1. Hold annual public meetings in each water resource planning region, highlighting the current ground water, surface water and water storage situations

2. Consider holding a "Kansas Water Day" statewide experience with activities that highlight the value and importance of a reliable, long-term water supply

3. Implement state-wide marketing and educational strategies focused on general consumers/citizens

    - Model a state-wide water conservation outreach campaign on effective campaigns with the goals of reinforcing the value of water and reducing water consumption

    - Incorporate information on the relationship of water conservation to energy conservation in educational efforts

IMPLEMENT ADDITIONAL OR ENHANCED WATER CONSERVATION POLICIES AND PRACTICES

STATEWIDE ACTION ITEMS

PHASE I

1. Develop a rewards and recognition program for successful Kansas conservation activities

    - Develop recognition and incentive systems to identify and reward communities, individuals, businesses and industry that implement local conservation best management practices successfully. This could include the creation of a private "water audit" certification program such as Leadership Energy and Environmental Design (LEED) to identify individuals achieving highly efficient water use and conservation

PHASE II

1. Ensure agency coordination assists in the promotion of regional drought and water conservation planning and acknowledges the significance of sound planning for community and state resiliency to the impacts of climate variability

    - Educate communities about importance of regional planning

- Simulate exercises to test regional plans at least every five years

- Ensure water conservation is properly evaluated as an alternative for water supply when providing financial assistance

2. Develop rate structure tools for local governments to use as example opportunities to promote more efficient water use

   - Share information on effectiveness of rate structures and conservation including recent work done by local water suppliers (such as Wichita)

   - Encourage communities to design bills to break down the individual cost components for the water (infrastructure, chemicals, labor, et cetera)

3. Increase the identification and repair of aging public water supply infrastructure. Encourage communities to maintain and manage local public water supply systems

4. Encourage local communities, through education and shared examples from successful communities, to consider developing and measuring water use reduction targets when appropriate

5. Evaluate state-owned facilities for water conservation effectiveness and develop standards for new state construction or renovation

PHASE III

1. Consider use of standards for water efficiency for state building construction, renovation and operation such as LEED

REDUCE BARRIERS AND INCREASE DEVELOPMENT OF LOCALLY DRIVEN CONSERVATION AND MANAGEMENT PLANS

STATEWIDE ACTION ITEMS

PHASE I

1. Develop financial and non-financial incentives to encourage additional irrigation water conservation. Non-financial incentives could include state policy changes to afford irrigators with greater water use flexibility to aid in achieving conservation goals on less water intensive crops or cropping densities

2. Coordinate with USDA Risk Management Agency (RMA) to address crop insurance policies that disincentive water conservation, such as limited irrigation

OGALLALA-HIGH PLAINS AQUIFER ACTION ITEMS

PHASE I

1. Increase support and promotion of Local Enhanced Management Areas (LEMAs)

    - Provide greater support to local entities in LEMA development and management

    - Target water conservation incentives, including existing cost share program and new incentives, to established LEMAs to support implementation of lower water consumption actions

2. Establish corrective controls that allow flexibility based on local average reasonable use within the LEMA statute so not to penalize those who have already demonstrated reduced water use

3. Expand the LEMA concept so a proposal can come forward to the Chief Engineer from either GMDs, directly from local water right holders or other entities such as county conservation districts

ENCOURAGE CONSERVATION PLANNING IN ECONOMIC DEVELOPMENT AND BUSINESS RECRUITMENT

STATEWIDE ACTION ITEMS

PHASE I

1. Coordinate with the Kansas Department of Commerce and Kansas Department of Agriculture Marketing Division to consider incentives to recruit businesses and focus economic development on businesses that value water conservation, use water efficient technologies and reduce the removal of water from the state

    - Encourage value added processing within Kansas by providing financial or water right credit incentives to dairies and feedlots

PHASE II

1. Develop tangible incentives for businesses to conserve water

PHASE III

1. Evaluate development of option for local economic development entities to obtain an appropriation of water or an existing water right without a specific point of diversion or place of use to protect the potential water needs of a business being recruited to their area. The appropriation would have a reasonable time limit applied for the startup of a proposed project

2. Create a "Blue Premium" program that businesses can use to market themselves and their water conservation efforts

3. Coordinate economic development efforts designed to recruit business and industry committed to water reuse or utilization of lower quality water

INCREASE ADOPTION OF WATERSHED PRACTICES THAT REDUCE FUTURE WATER SUPPLY LOSS

STATEWIDE ACTION ITEMS

PHASE II

1. Evaluate programs that offer long term conservation as a tool for preserving healthy landscapes

2. Update the state plan for the comprehensive control of salt cedar and other non-native phreatophytes

RESERVOIR ACTION ITEMS

PHASE I

1. Prioritize and implement targeted funding in priority watersheds by working with local, state and federal conservation programs and partnerships

    - Utilize existing groups such as conservation districts and KSRE to promote programs and initiatives

    - Build on the success of Watershed Restoration and Protection Strategy (WRAPs) plans and engage expertise of stakeholder leadership teams

    - Increase utilization and adoption of BMPs by working with local leaders

    - Target construction and maintenance of watershed structures that provide the highest sediment reduction in priority watersheds through Watershed Districts

2. Increase communication and interagency coordination on existing and planned streambank restoration projects to define interagency priorities for streambank projects and promote the channeling of resources to the highest priority areas. Build upon the existing outreach and education efforts already underway to promote streambank restoration projects

3. Evaluate the existing state, federal and private technical and financial resources and policies and programs available for streamside vegetation conservation and identify gaps to secure and protect riparian buffers in priority watersheds above water supply reservoirs.

4. Develop a detailed monitoring strategy to assess current and ongoing sediment inflow into public water supply reservoirs

    - Prioritize basins that will need assessment

    - Identify all components of the monitoring strategy, including bathymetry and inflow stream sediment monitoring network

    - Define a strategy to identify particular sub-basins that contribute the most significant loading rates

5. Develop a strategy to overcome hurdles with federal permitting for new conservation practices and structures to decrease the sediment load from entering water supply reservoirs

PHASE II

1. Continue and enhance support of research of Best Management Practices (BMPs)

    - Focus additional resources to assure installed BMPs are maintained

- Develop a BMP guide that is geared for urban and rural communities that also addresses economic benefits of conservation

- Develop or utilize existing research to quantify the financial impact of in-field soil loss to agriculture and the impacts to water supply storage

2. Develop a budget to identify costs associated with monitoring, assessment and program implementation on a watershed-by-watershed basis

PHASE III

1. Evaluate the changes in sediment accumulation in public water supply reservoirs

OTHER REGIONS ACTION ITEMS

PHASE I

1. Develop and implement a sediment and nutrient reduction Conservation Reserve Enhancement Program (CREP) in watersheds above targeted federal reservoirs and watersheds with excessive nutrient runoff. This program would serve to support ongoing efforts to address the Kansas Nutrient Reduction Strategy developed by KDHE, KWO, KDA, and KDWPT.

MODIFY RESERVOIR OPERATIONS AND DOWNSTREAM TARGETS TO MOST EFFICIENTLY OPERATE RESERVOIRS FOR WATER SUPPLY

RESERVOIR ACTION ITEMS

PHASE I

1. Coordinate with U.S. Army Corps of Engineers through tabletop exercises and workshops on a plan to improve operational efficiency of water supply reservoirs

2. Evaluate the level of minimum releases from Clinton, Pomona, Melvern and Hillsdale Reservoirs

3. Invest in research and development efforts of improving testing capabilities in reservoirs and rivers to allow a more advanced notice of potential water quality issues and coordinate with the U.S. Army Corps of Engineers in operation of the reservoirs to minimize conditions for algae blooms and avoid downstream impacts.

PHASE II

1. Assess the most suitable locations for the formation of additional Water Assurance Districts and/or Special Access Districts, in areas not currently served by Districts, to expand and improve coordination of the use of available supplies from Kansas reservoirs

2. Assist in the formation of special access districts and additional Water Assurance Districts, where appropriate and one does not already exist

3. Evaluate improved operational efficiencies at the state's reservoir irrigation districts

4. Evaluate Minimum Desirable Streamflow (MDS) targets based on updated data and needs where determined that changes would improve water management

5. Modify target flows on the Kansas River to save water stored in Tuttle Creek, Milford and Perry Reservoirs

6. Reduce minimum releases and modify schedules at Clinton, Pomona, Melvern and Hillsdale Reservoirs to increase water supply yield

PHASE III

1. Change reservoir operations to bypass sediment during high-flow events while maintaining downstream water quality and flood control

2. Evaluate appropriate level of drought risk at each reservoir and consider pros and cons of selectively increasing or decreasing risk at certain lakes

OTHER REGIONS ACTION ITEMS

PHASE II

1. Develop background information necessary to assess future operation and management changes of the Kansas River basin reservoirs and their relationship to downstream surface water and ground water resources

    - Evaluate alternative targets that meet downstream customer needs and perform comprehensive performance assessment of downstream Kansas River Water Assurance District customers' intake at various river stages to ensure intakes have sufficient access to flow at alternative target flow

    - Improve characterization of the Kansas River alluvial aquifer including installing and monitoring observation wells

    - Develop a stream-aquifer model of the Kansas River alluvial aquifer from Junction City to the junction with the Missouri River to examine the effect of scenarios of future development and management on ground water and river water levels

    - Evaluate potential effect of scenarios of future development and management on water quality conditions, recreation and wildlife and habitat

IMPROVE INTERSTATE COOPERATION SO THAT KANSANS' WATER NEEDS ARE MET AND PROTECTED

STATEWIDE ACTION ITEMS

PHASE I

1. Develop a long term strategy for representing Kansas in interstate water issues that best serves Kansas and its citizens

    - Routinely coordinate interstate water issues within Kansas water agencies to ensure the state is best represented

    - Improve opportunities for local stakeholders to engage in and provide input on interstate water issues

- Host regularly scheduled public meetings to connect stakeholders with policy makers and those involved with advising and making interstate decisions

2. Ensure Kansas interstate water compacts are monitored and enforced and build upon existing working relationships with other compact states

3. Host a Governor's Summit among the Ogallala Aquifer states to develop a regional vision with a focus on cooperative efforts and common goals across the states (Planning initiated in Phase I, to be held in Phase II)

4. Work with other states to address federal water related policy proposals that have negative impacts on the region

PHASE II

1. Develop additional agreements with other states to support interstate cooperation on water management

RESERVOIR ACTION ITEMS

PHASE I

1. Coordinate with other states that have federal reservoirs with water supply storage to influence national policy which supports local needs

OTHER REGIONS ACTION ITEMS

PHASE I

1. Host a Governor's Summit between the Missouri River states to collaborate on river and reservoir management issues (Planning initiated in Phase I, to be held in Phase II)

PHASE II

1. Consider hosting a Governor's level discussion with neighboring states targeted at developing viable solutions to interstate debates and common issues if needed

2. Consider the options for identifying existing funds to be earmarked for interstate litigation

INCREASE THE REGIONALIZATION OF WATER SUPPLY TO IMPROVE THE LONG-TERM WATER SUPPLY RELIABILITY

STATEWIDE ACTION ITEMS

PHASE II

1. Conduct planning workshops to highlight successful case studies on development of regional water systems that provide examples of various approaches for implementation

2. Enhance public water supply planning assistance, including technical and engineering reviews of preliminary water supply proposals

3. Identify and recommend changes needed to state statutes and regulations that impede or prohibit regionalization and partnerships

4. Identify public water supplies with a single source of supply and, where appropriate, provide planning and financial assistance to develop secondary sources

5. Provide planning and financial assistance to water systems to facilitate interconnection opportunities among water supply systems to help address drought vulnerability

6. Require preliminary engineering reports to include regionalization alternatives when new water supplies are under consideration

7. Seek and promote opportunities for regional economic development and regional water supply planning to be developed based on water resource boundaries

8. Work with emergency and public water supply funding agencies to encourage proactive development of secondary sources by limiting or prohibiting funding for single source entities during an emergency

EVALUATE CHANGES TO THE KANSAS WATER APPROPRIATION ACT AND RULES AND REGULATIONS TO PROMOTE BETTER BALANCE BETWEEN EFFICIENT WATER USE AND ECONOMIC BENEFIT

STATEWIDE ACTION ITEMS

PHASE I

1. Develop a water right violation and enforcement process that is more transparent as well as consistent and is included in Rules and Regulations

    - Increase enforcement and implement more stringent fees and penalties for over pumping and other violations. This action will include a regulatory change with full comment period

2. Limit the movement of a point of diversion greater than 300 feet in areas where the source is ground water and resource is declining unless the applicant of the change application can demonstrate

hydrologic analysis or pump test results, that the new, proposed location does not adversely affect any current authorized nearby wells, including domestic wells. This change will include a regulatory change with full comment period

3. Allow for the leasing of water rights to develop authority for the full beneficial use of the resource while protecting senior water rights

4. Develop flexibility options for stockwater, municipal and industrial uses to improve management and evaluate current consumptive use regulations to ensure they are being applied properly

PHASE II

1. Explore opportunities to establish Water Banks to promote trading of water amongst water right holders

    - Create a model to run "mock banks" to test the banking concept for a specific geographic area

    - Reduce barriers against and develop incentives for additional water bank creation

2. Evaluate the water conservation potential and economic impacts of approving applications for reasonable quantity rather than maximum and eliminate perfection and certification process

OTHER REGIONS ACTION ITEMS

PHASE I

1. Administratively close additional areas of the state to new appropriations where already fully allocated

2. Propose legislation to modify Multi-Year Flex Account (MYFA) statute to allow roll forward of unused water when a water right holder re-enrolls into another five-year flex account

3. Use the U.S. Geological Survey Model (USGS) to evaluate recharge values in Equus Beds Groundwater Management District No. 2 (GMD#2) to determine if areas are currently over appropriated and should be closed to new appropriations

STATEWIDE ACTION ITEMS

PHASE I

1. Consider options for more effective organization of water related roles and responsibilities at the state agency level or identify ways to promote greater efficiency and continued collaboration between agencies within the current structure

2. Develop stronger working relationships between local and state entities through improved communication, streamlined collaboration and realigned water cooperative strategies

3. Improve customer service approach of the state's water agencies by simplifying and streamlining processes and procedures to make them more customer friendly and easier to understand, prioritizing agency resources to better serve water right holders and other citizens, and utilizing stakeholder input to improve service activities

PHASE II

1. Encourage discussions between local entities to evaluate local efforts and organizational structures

2. When feasible, locate state employees at field offices or other locations where they are closer to those they serve and move processes to local offices

3. Where possible synchronize permitting between agencies on specific projects

PROMOTE IRRIGATION EFFICIENCY TECHNOLOGIES

STATEWIDE ACTION ITEMS

PHASE I

1. Identify most efficient system technologies for use by Kansas irrigators by working with irrigation system and water management technology manufacturers, Kansas State University (KSU), crop consultants, ground water management districts (GMDs) and others

2. Ensure appropriate irrigation efficiency technology and irrigation management practices are eligible under the Environmental Quality Incentives Program (EQIP) by working with USDA Natural Resource Conservation Service (NRCS)

3. Ensure appropriate irrigation efficiency technology and irrigation management practices are eligible under the state's Water Resources Cost-Share Program

4. For emerging irrigation technologies, consider application for USDA's Conservation Innovation Grant funding to accelerate technology transfer and adoption of promising technologies

5. Determine optimum plant development stages for most efficient water application opportunities by collaborating with the seed industry, KSU, crop consultants and others

6. Demonstrate various technologies at KSU Agricultural Experiment Stations

PHASE II

1. Develop incentives and recognition programs for entrepreneurs based in Kansas who develop irrigation efficient technologies

    - Work with local economic development and rural development experts to encourage local investment in irrigation technology

2. Explore opportunity and feasibility of developing a state-led innovation grant program to encourage the advancement of next-generation irrigation technology and associated entrepreneurial enterprises

3. Help farmers and ranchers understand and implement available technologies and production practices that reduce water consumption with minimal negative economic impacts or increased economic value

OGALLALA-HIGH PLAINS AQUIFER ACTION ITEMS

PHASE I

1. Establish a Technology Outreach Taskforce to assist in the working model development and implementation of the field scale demonstrations

2. Showcase, on a field scale, the latest technologies in irrigation infrastructure, irrigation water management, soil moisture measurement, conservation tillage, automation, telemetry and other agronomic practices aimed at reducing irrigation water use

PHASE II

1. Develop Water Technology Farms at locations throughout the Ogallala-High Plains Region, targeting Local Enhanced Management Areas (LEMAs) by working in concert with irrigation technology manufacturers and the irrigation research community

    - Determine what risk on Water Technology Farms can be mitigated by Risk Management Agency (RMA) and consider other funding to cover any uninsured risk assumed by landowner/operator for participating in Water Technology Farms

    - Work with equipment manufacturers and dealers in a public-private partnership to provide the equipment to participating landowners/operators

INCREASE ADOPTION OF LESS WATER INTENSIVE CROP VARIETIES

STATEWIDE ACTION ITEMS

PHASE I

1. Form a collaborative stakeholder team to set sorghum research priorities and develop research and funding strategy and present strategy to potential funding partners, including the Kansas Legislature

2. Ensure crop insurance policies do not discourage use of alternative, specialty and cover crops

3. Collaborate with crop consultants and other agricultural advisors to support farmers interested in less water intensive alternative crop production

4. Encourage state universities to expand engagement in development of teaching, research and extension programs related to less water intensive crop varieties

5. Improve adoptability of feed wheat, along with other alternate crops, through marketing, commodity segregation, research and education

6. Encourage producers to consider all aspects of agronomic management systems when trying to make water efficient decisions

PHASE II

1. Identify ways to create new and strengthen existing markets for less water intensive crops, including specialty and alternative crop varieties

2. Promote development of markets for alternative crops with a focus on value-added agriculture such as livestock feed and biofuels

3. Develop a strategy that supports research on the role of less water intensive forage and grasses such as triticale

4. Partner with and support public and private entities focused on development of drought resistant corn and related advancements

5. Provide needed research and education that leads to increased adoption of cover crops to reduce field soil loss while improving overall soil health

6. Implement sorghum research funding mechanism based on a public-private partnership (Perhaps similar to Wheat Genetics Resource Center (WGRC))

    - Address sorghum research needs such as yield, stalk strength, silage density, nutritional value to livestock, weed control and ability to be used for biofuels production

    - Consider pursuit of grant funds (National Science Foundation (NSF)) or multi-state partnerships for initial sorghum research start-up efforts

PHASE III

1. Implement research in order to increase select pesticide resistance for sorghum and cotton along with drought resistant corn production

OTHER REGIONS ACTION ITEMS

PHASE I

1. Address policy issues that limit the growth of cotton in Kansas

    - Identify potential statutory or regulatory changes

    - Encourage U.S. Department of Agriculture and U.S. Environmental Protection Agency regulatory approval of Enlist Duo™ Cotton for Kansas for the 2016 planting season

    - Support additional pesticide product and seed variety development that improves opportunities for cotton growth in Kansas

2. Evaluate profitability, prices and water use of alternative crops

3. Strengthen the use of Driftwatch™ by growers of sensitive crops and pesticide applicators

PHASE II

1. Develop recommendations based on research related to corn and cotton rotation

2. Incorporate supporting technology advancements for cotton production such as weed control systems

IMPLEMENT RESEARCH-BASED TECHNOLOGY AIMED AT BETTER UNDERSTANDING OUR STATE'S WATER SUPPLY

STATEWIDE ACTION ITEMS

PHASE I

1. Continue to further develop and disseminate information about the state's water resources, including additional data, maps and reports and improve understanding of the Ogallala-High Plains Aquifer as an aid to water management in western Kansas

2. Expand adoption of on-line water use reporting system so customers are better served and information is readily available

3. Share research findings broadly with Kansas citizens to improve understanding of our state's water resources

4. Annually coordinate with university researchers regarding the Vision for the Future of Water Supply in Kansas to ensure future collaborative research supports the successful implementation of the Vision

PHASE II

1. Build economic assessments into water management research wherever feasible

2. Develop a Ground and Surface Water Model Maintenance Team dedicated to continual maintenance of hydrogeologic computer models to ensure models are current, defendable and ready for use at all times

3. Maintain state-wide stream gaging network to continue to provide near real-time information about stream and river levels. Evaluate the pros and cons of a state maintained stream gaging network

4. Share research findings broadly with Kansas citizens to improve understanding of our state's water resources

5. With local water management Districts, develop on-line water availability tool that could be used by individuals, organizations, local entities and consultants to evaluate potential water development or management projects

PHASE III

1. Encourage multi-disciplinary approaches (eg. agricultural sciences, economics, engineering, legal, public policy, etc.) to research-based technology to increase success of adoptable solutions

2. Establish "shovel ready" collaborative research proposals that implement the Vision towards which funding could be directed as grant and other funding opportunities arise

RESERVOIR ACTION ITEMS

PHASE II

1. Collect sediment cores at federal water supply reservoirs to document continuing rates of sediment deposition

    - Sediment core results would be compared with sonar derived water storage changes to develop the most accurate assessment of reservoir changes possible

    - Sediment core samples could also be used to identify past and present sources of sediment from watersheds to assess and improve the effectiveness of erosion control measures

2. Ensure digital data such as Geographical Information Systems (GIS) and the data repository at the Data Access and Support Center for water systems is available and maintained for all rural water districts, groundwater management districts and communities in Kansas

PHASE III

1. After a minimum of 10 years from the previous survey, collect and compare sediment cores at federal reservoirs to assess changes in rates of sedimentation and, where appropriate and necessary, repeat bathymetric surveys

2. Collect data through operation of water quality monitors and suspended sediment sampling at each Kansas federal water supply reservoir in two year rotations until each reservoir has been assessed

OGALLALA-HIGH PLAINS AQUIFER ACTION ITEMS

PHASE I

1. Expand observation well network in the High Plains Aquifer

PHASE II

1. Evaluate driller's logs and require the submission of test well data to better characterize the Ogallala-High Plains Aquifer

2. Develop long-term research and business plans to allow farmers and local communities to prepare for successful transition to dryland farming

OTHER REGIONS ACTION ITEMS

PHASE II

1. Develop map for eastern Kansas, similar to the Estimated Usable Lifetime of the Ogallala Aquifer, that shows municipalities and other public water suppliers at greatest risk today, in the immediate future or in the long-term of having insufficient water supplies to serve area's needs

DEVELOP CAREER AND TECHNICAL EDUCATION PROGRAMMING RELATED TO WATER RESOURCE MANAGEMENT AND TECHNOLOGY TO BUILD THE NEEDED WORKFORCE

STATEWIDE ACTION ITEMS

PHASE I

1. Utilize agricultural education and 4-H to encourage young people to develop agricultural programs using water efficient technologies and less water intensive crops or crop varieties through recognition and incentive programs

2. Develop models for the inclusion of water conservation into the agricultural education curriculum, including classroom, supervised agricultural experience and FFA activities

3. Encourage the development of community college, technical programs and university programs to prepare the future workforce to work in irrigation efficiency technologies and with necessary expertise in less water intensive crops and crop varieties

1. Consider further development and support of water related academic programs at the state universities, community colleges and technical schools, including majors, minors and certificates

2. Integrate more education on less water intensive crops in university undergraduate and graduate programs for agronomists, animal scientists, grain scientists and agricultural economists

3. Develop educational material and programs to be included with the community college and career and technical education systems

4. Develop a career and technical education certificate to be offered in Kansas high schools

RESTORE WATER SUPPLY LOST TO SEDIMENTATION THROUGH DREDGING AND OTHER IN- LAKE SEDIMENT MANAGEMENT TECHNIQUES

RESERVOIR ACTION ITEMS

PHASE I

1. Conduct workshops with state and federal agencies and local stakeholders on data collection and research findings and discuss impacts, benefits and feasibility of implementing alternatives

2. Remove and dispose up to three million cubic yards of sediment from John Redmond Reservoir

PHASE II

1. Collect data and conduct analysis of modifications to the geometry and operations of John Redmond Reservoir to increase the passage of sediment through the reservoir

    - Collect sediment cores from John Redmond Reservoir, suspended sediment samples in lake and downstream on the Neosho River and lake flow and outflow data

    - Develop computer model to simulate the hydrodynamics and sediment transport for John Redmond Reservoir. Use the model to assess the impact of modification scenarios on sedimentation and water supply storage

2. Analyze and evaluate feasibility of sediment transport and hydrosuction sediment removal at Tuttle Creek Reservoir to reduce stored sediment while maintaining downstream flood control and water quality

PHASE III

1. Complete in-lake dredging at John Redmond Reservoir, modifying the reservoir geometry to encourage sediment bypass

ALLOW FOR THE TRANSFER OF WATER SUPPLIES BETWEEN BASINS WHERE FEASIBLE AND COST EFFECTIVE

STATEWIDE ACTION ITEMS

PHASE I

1. Eliminate statutory prohibition to use drinking water State Revolving Loan Fund (SRF) funds for water transfers and identify other state policies which unnecessarily limit transfers

2. Review opportunities to increase utilization of the Missouri River to meet Kansas' needs while recognizing and protecting the existing users

3. Communicate and collaborate with neighboring states on potential water transfers

PHASE II

1. Complete evaluation of large water transfers including legal, environmental, economic and technical issues

2. Review use of right-of-ways for use by water transfer infrastructure

PHASE III

1. Identify suitable areas and ability to transfer water to areas of need

RESERVOIR ACTION ITEMS

PHASE I

1. Develop interconnected water storage computer model for all eastern Kansas basins with federal water supply reservoirs

PHASE III

1. Update mid 1980s Kansas Water Office plan to interconnect reservoirs across multiple basins to move water to higher demand and increase overall yield

2. Evaluate opportunities to connect reservoirs to improve overall management and serve as a hydrologic conduit and where appropriate implement system to transfer high flows to increase system yield

EVALUATE THE SOURCES AND POTENTIAL USES OF LOWER QUALITY WATER

STATEWIDE ACTION ITEMS

PHASE I

1. Compile inventory of lower quality waters, including type, quantity and location, as well as, an assessment of potential uses and contaminants contained in water. Lower quality waters include treated wastewater effluent, grey water, stormwater runoff, oil and gas flow back and produced water, brackish surface and ground water and other waters with elevated levels of contaminants

    - Identify all barriers that may exist to allow the use of lower quality waters

- State and local laws, regulations, guidelines and policies
- Review irrigation supplements to wastewater and current calculations that impact the consumptive use at the facility
- Utilize USGS model to determine the effect of chloride remediation activities in the Equus Beds Aquifer
- Ensure that cost-share incentives are available for stockwater users to adopt reuse technology

PHASE II

1. Identify best treatment technologies for lower quality water for various beneficial uses
    - Determine research needs that exist for technology developed specific to Kansas waters
    - Partner with irrigation equipment manufacturers and agronomists to develop equipment technology capable of utilizing lower quality water suitable for irrigation
    - Address water quality implications with delivery systems and potential/risk for cross contamination, including implications to National Pollution Discharge Elimination System (NPDES) Permits and minimum desirable stream (MDS) flow designations
2. Consider incentives for the oil and gas industry which encourage the use of produced water
3. Expand assessment of the water quality and physical characteristics of aquifers containing brackish ground water
4. Pursue opportunities to recycle and reuse appropriated stockwater
    - Investigate opportunities to build programs or regulatory procedures to promote efficiencies
5. Develop an education/training strategy through the implementation of pilot projects, in partnership with public water suppliers and other water users, to demonstrate the potential uses of lower quality water

SECURE ALL AVAILABLE STORAGE AT FEDERAL RESERVOIRS INCLUDING REALLOCATING STORAGE WHERE SUCH ACTIONS ARE POSSIBLE

RESERVOIR ACTION ITEMS

PHASE I

1. Develop a plan to address future use storage in Milford, Perry, Big Hill, Clinton and Hillsdale Reservoirs; including the collection of revenue to call future use storage into service in Clinton and Hillsdale

PHASE II

1. Address items identified in hydrologic adequacy evaluations at Kanopolis Reservoir and implement pool raise. Evaluate feasibility of filling v-notch to create additional water supply storage
2. Complete feasibility study at Lovewell Reservoir
3. Coordinate with city of El Dorado on a plan to address future use storage in El Dorado Reservoir
4. Evaluate availability of water quality storage in Elk City reservoir for water supply in trade for storage at Big Hill
5. Reallocate future use water supply storage to water quality storage at Milford and Perry Reservoirs and initiate calling remaining portion of future use storage into service

PHASE III

1. Increase pool elevations and reallocate storage at Council Grove Reservoir
2. Initiate calling future use storage into service at Clinton, Big Hill and Hillsdale Reservoirs
3. Reallocate water quality and other storage to water supply storage at Melvern, Pomona and Fall River Reservoirs

INCREASE OTHER SOURCES OF AVAILABLE STORAGE FOR WATER SUPPLY

STATEWIDE ACTION ITEMS

PHASE II

1. Within municipal systems, develop methods to use locally collected stormwater and increase adoption of on-site or individual storm water collection through activities such as rain barrels and rain gardens

2. Review of policies limiting capture of urban stormwater runoff and reuse in areas where capture may serve as an additional source of supply without impairing water quality

3. Evaluate opportunities for additional managed sub-surface or aquifer storage within Kansas

4. Consider the development of rural water districts in areas where domestic ground water supplies have been depleted or are unusable

5. Increase collection of agricultural on-site rainwater collection

    - Inventory existing farm ponds and look for opportunities to utilize funding for further development and remediation

    - Evaluate existing rain lagoons and opportunities to utilize collected water in lieu of ground water sources

PHASE III

1. Evaluate need for additional on-site collection and use

2. Evaluate use of Department of Transportation right-of-ways for water supply storage and implement where feasible

3. Implement urban stormwater runoff capture and reuse in areas where such storage and reuse may serve as an additional source of supply without impairing water quality

RESERVOIR ACTION ITEMS

PHASE II

1. Develop larger on-site storage for irrigation and stockwater with potential funding assistance

2. Identify additional small multipurpose reservoirs that can be built and determine their feasibility

PHASE III

1. Construct additional Multi-Purpose Small Lakes (MPSL) reservoirs that have been identified as needed and feasible

2. Identify off stream storage sites that will limit sedimentation and evaporation loss

3. Identify additional large reservoir sites and evaluate costs, limitation and overall benefits (including economic) of new large reservoirs and secure suitable sites from development

4. Implement design and construction of off-stream storage if determined feasible

PHASE I

1. Encourage research on the rate and volume of water moving from playas to the Ogallala- High Plains Aquifer; quantify the levels of restoration needed and enumerate the average amount of water deposited annually in playas

ECONOMIC ANALYSIS

As stated by Governor Brownback during his Call to Action, "Water and the Kansas economy are directly linked." Recognizing the significance of this connection, the Vision will be accompanied by a complete economic analysis of the role of water in Kansas and how its use can best benefit the Kansas economy. Following is a description of the components and timeline for completion of the economic analysis.

WATER CONSERVATION

Policy makers should ensure that stakeholders have the best possible tools available in order to make decisions regarding water conservation. At first glance, water conservation seems to imply reductions in short term income. However, alternate sources of income in the short term as well as increased certainty in long term incomes may partly or wholly offset any short term losses.

IMPACT ANALYSIS

In order to extend the economic life of the aquifer and maintain the economic base of the region, water conservation alternatives will be evaluated. Economic analyses will be conducted to estimate the impacts to producers, the regional economy and hydrologic impacts to the Ogallala aquifer associated with a variety of water conservation policies. The economic impact of drought will be assessed with cooperation from the National Oceanic and Atmospheric Administration (NOAA) and the National Integrated Drought Information System (NIDIS).

DECISION MAKING TOOLS

Results from the impact studies and current research on limited irrigation economics will be utilized to create decision-making tools for stakeholders. These tools can quantify short versus long term costs and benefits. This ensures that stakeholders are well informed when considering policy alternatives to affect the entire area or make decisions in their businesses. These tools will also assist stakeholders in developing water rate structures that provide an economic incentive to conserve water.

These studies and tools will also be used to create educational materials on water conservation practices. Materials will be geared toward specific stakeholders highlighting the potential economic benefits of conservation.

VALUE OF WATER

Calculations of incomes, expenses and net income generated per acre-foot of water use for crops, dairy and cattle have been estimated and will continue to be refined. These calculations will be expanded to include other sectors.

Determining the value of water allows policy makers to consider alternatives such as water trading among users, sectors or even basins if policies allow water rights holders to do so. Market structures allowing for trading amongst users will also be evaluated.

WATER CONSERVATION OUTREACH

Public outreach based on the environmental as well as economic benefits of water conservation will appeal to a broader audience, increasing effectiveness.

WATER MANAGEMENT

A full economic analysis on the value of water to the Kansas economy will be conducted. This study will draw from previous, current and future research. Breaking down water strengths and challenges by region within the state and the value of water to each region will aid in regional planning.

TECHNOLOGY AND CROP VARIETIES

An evaluation of the economic cost and benefits of water saving technologies will be conducted. Studies on the profitability of alternative crops, new varieties and dry land versus irrigated returns will continue to provide stakeholders accurate information. These studies will aid stakeholders in making decisions to maximize the return from their limited water resource.

ADDITIONAL SOURCES OF SUPPLY

Studies that evaluate the economic costs and benefits of dredging versus other conservation practices that reduce soil erosion and gully formation will be expanded. Determine the feasibility of allowing interbasin water transfers based on the value of water and its importance to regional economies. The costs and benefits of constructing new reservoirs and other sources such as lower quality water will be evaluated.

ECONOMIC ANALYSIS TIMELINE

CURRENT STUDIES

- Value that irrigation water adds to the local and state economies
- Income, expense and net income generated from an acre-foot of water
- Long-term supply and demand for water in all basins
- Costs and benefits of various sediment management strategies

FUTURE STUDIES - PHASE I

- Impact analysis on policy alternatives
- Decision making tools
- Water conservation outreach

FUTURE STUDIES - PHASE II

- Economic analysis of value of water in Kansas, by region
- Decision making tools

MEASURING SUCCESS WITH A REGIONAL APPROACH

Establishing goals will allow Kansans, by region, to define their future water needs and provide a benchmark for determining success. The road to setting the regional goals will include identification of regional goal leadership teams, facilitated public outreach and review by the Kansas Water Authority. Following is the proposed schedule and process for developing the regional goals of the Vision.

DEFINING REGIONAL PLANNING AREAS (*NOVEMBER - DECEMBER 2014*)

Regional Planning Areas will be developed to represent the varied and unique water resource conditions that exist throughout the state. The map found on the following page represents draft Regional Planning Areas and is subject to further refinement based on public input.

The Regional Planning Areas were developed based on three criteria: regional hydrology, common issues and interests and existing regional water management entities.

The western planning areas are based first on the primary Ogallala Aquifer areas in Kansas recognizing that many of the activities and common interest follow county boundaries.

Issues in eastern Kansas are mainly surface water and reservoir related. As such, the draft Regional Planning areas are based on surface water hydrology as shown by watershed basins.

The central portion of the state is divided up on a combination watershed, county and groundwater management district boundaries. For the north central region, many of the primary issues surround either Bureau of Reclamation reservoir or surface and alluvial ground water management. The Equus Beds-Walnut Region combines both ground water and surface water and is based primarily around common interests and issues. The south central planning region has communities with similar issues and approaches.

Preliminary feedback on the proposed Regional Planning Areas collected during the 2014 Governor's Conference on the Future of Water in Kansas will be used to refine the areas. Final area boundaries may be refined during the full goal setting process.

IDENTIFYING REGIONAL GOAL LEADERSHIP TEAMS (*JANUARY 2015*)

For each Regional Planning Area, up to an eleven-person Regional Goal Leadership Team will be identified to represent various water resource categories. A chair of each Regional Goal Leadership Team will be identified by the Kansas Water Authority. The role of the team is to participate in the public scoping process in their region, develop draft goals for their region based on public input and available resource condition information and present the draft goals to the Kansas Water Authority.

PUBLIC OUTREACH (*FEBRUARY – MARCH 2015*)

A minimum of one public outreach event will be hosted in each of the Regional Planning Areas. During each event, water resource conditions unique to the region will be shared by members of the Vision Team and Kansas Water Authority. A trained facilitator will be provided for each event to assist in the discussion and process towards developing potential regional goals. Each member of the five-person Regional Goal Leadership Team will attend the outreach events in their region to hear first-hand and participate in the discussion. Notes from each event will be posted on-line.

DEFINE REGIONAL GOALS AND PRESENT TO KWA (*APRIL – MAY 2015*)

Each Regional Goal Leadership Team will meet to review the feedback received during the public outreach events and develops draft goals for their regions. Teams will present the proposed draft regional goals to the Kansas Water Authority. The Kansas Water Authority will provide advice towards the further development of the regional goals.

PUBLIC COMMENT (*JUNE – JULY 2015*)

All draft regional goals and the corresponding Kansas Water Authority advice will be posted on- line for public comment for a minimum of 30 days.

INCORPORATE REGIONAL GOALS INTO VISION (*AUGUST 2015*)

The Kansas Water Authority will review feedback received during the public comment period and make decisions on the regional goals. Finalized regional goals will be incorporated into the Vision for the Future of Water Supply in Kansas.

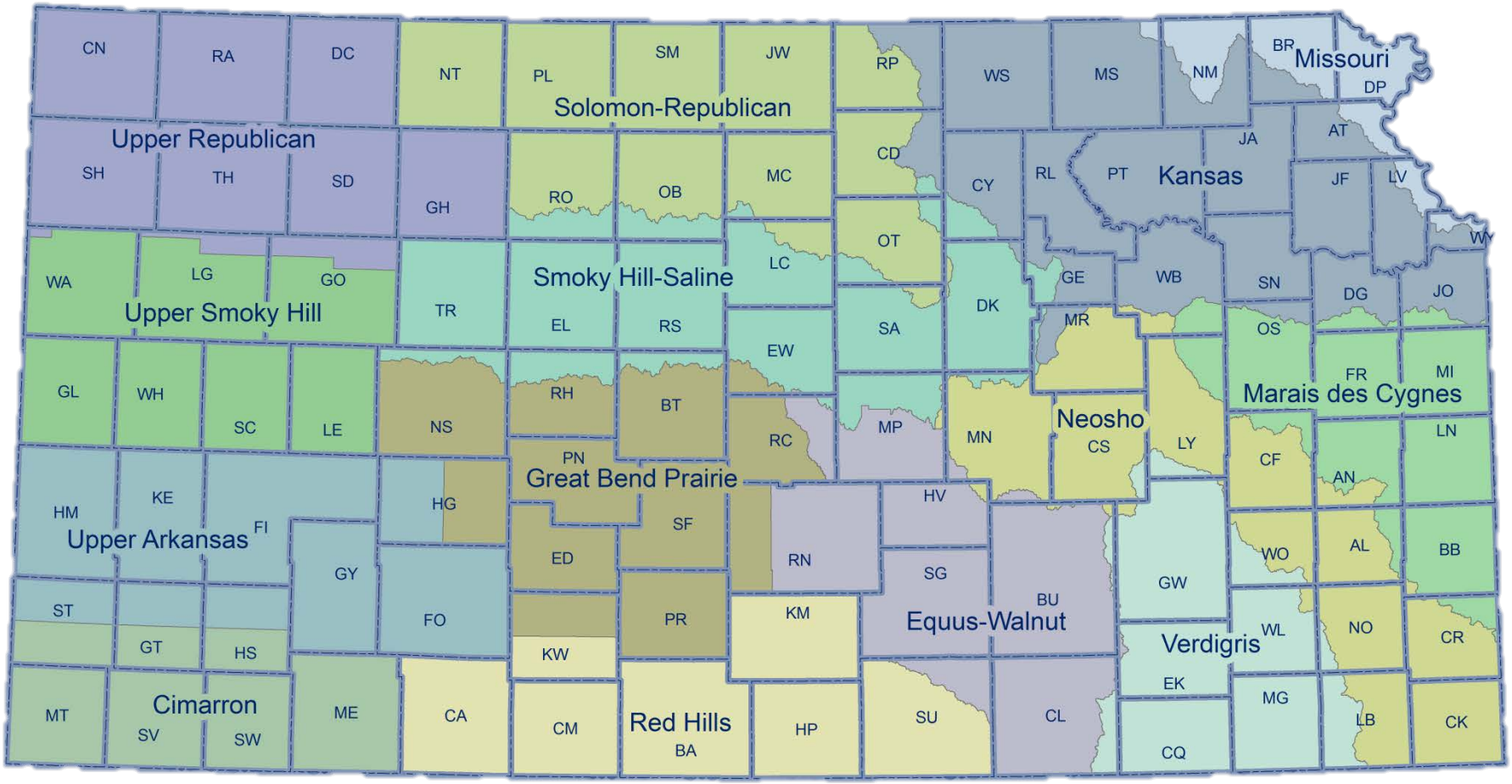
PRESENT REGIONAL GOALS TO GOVERNOR AND LEGISLATURE (*NOVEMBER 2015 - JANUARY 2016*)

The final Regional Goals will be presented at the 2015 Governor's Water Conference and to the Governor and Kansas Legislature during the 2016 Legislative Session.

ANNUAL REVIEW (BEGINNING IN JANUARY 2017)

Following the first year of the goal setting process and annually thereafter, the Kansas Water Authority will evaluate progress towards meeting milestones and overall goals and will assess the need for further action. Annual public meetings will be held in each water resource planning region, highlighting the current ground water, surface water and water storage conditions. Additionally, progress towards achieving the goals will be assessed through the *Kansas Water Plan* every five years.

REGIONAL PLANNING REGIONS



Throughout the Vision stakeholder outreach process the Vision Team identified many Kansas municipalities, industries and individuals who have previously or are currently taking actions such as implementing water conservation practices and policies or adopting water efficient technologies to ensure their future water supply reliability. These Kansans are living the strategies included in this Vision today. Below are just a few examples of "Be the Vision" Kansas communities, companies and individuals.

OWENS CORNING

Owens Corning, the Fiberglas manufacturing processor in Kansas City, is one example of an industry that has successfully implemented water conservation practices. Owens Corning has been a water intensive process over the recent decades. In addition to significant city water consumption, well water was readily and inexpensively available and was used for many things including non-contact cooling of chemical storage tanks. Since well water was considered cheap and effective it was utilized for a multitude of uses around the facility for cooling, washing and for "insurance" in a few applications.

The Kansas City plant water reduction journey began about a decade ago when some very rough data was used for a study. Owens Corning then began setting some targets for water reduction across the company as it focused on reducing its "footprint."

The first large water reduction project focused on eliminating the non-contact cooling of chemical tanks. A chiller system was installed as a tank cooling function and as a result well water usage was reduced by nearly one million gallons per day. In 2011 they also incorporated two additional water focused projects which dropped the well water consumption fairly dramatically. As a result of these three steps, the plant water usage significantly declined from approximately one million gallons per day to an approximate 225,000 gallon per day usage rate.

Following the changes, the plant also decided to establish a small unofficial "water team" to focus on a very detailed mapping of water consumption for both city and well water usage. The first task was to understand where water loss was occurring to address each specified area. The largest usage was in the area of well water and they installed additional meters for more daily data collection from existing meters to create a detailed water map of the plant. It was quickly determined that closed loop water systems could easily be a hidden culprit of some of the large water usage issues. After addressing the closed loop systems, more significant water reductions were made in 2011. Owens Corning ended the year with a daily usage of approximately 60,000 gallons of well water per day.

In 2012, through more focused efforts, they again cut this number in half. Their data collection showed they were doing well overall except for some upset conditions that could occur on a weekend or over a period of time when it would go unnoticed.

In 2013, in addition to spot projects that reduced water consumption, they also installed a system of water meters on the well pumps, city water meters, sewer outfall meters and at a number of "key" users throughout the plant. All of these meters have been connected through a central computer along with alarm limits. When a series of alarms hit, it will direct the appropriate people to the area to address the item. This system is now being tested. Any alarms will trigger a system of email alerts to a team as well as to the appropriate people on duty in the plant at that time. This alert system will close the loop on

these upset conditions and help eliminate instances that have occurred and resulted in large scale water waste in the past.

All of these dedicated conservation efforts have led to Owens Corning being recognized within the local, state and national communities for water reduction, as well as other environmentally focused projects. An additional bonus to the conservation efforts has led to large reductions in both the water and sewer costs to the facility.

FORT RILEY

In April of 2011, Fort Riley received the honor of being selected by the Army as one of eight Net Zero Water Pilot installations. The Net Zero Pilot installations are serving as test beds for the Army to identify lessons learned and best practices to reduce water consumption that can be implemented across all Army installations. Net Zero installations have ambitious goals including reducing water use intensity by 50 percent by 2020.

Fort Riley, in partnership with faculty and research students from Kansas State University (K- State), has been developing innovative projects with the Environmental Protection Agency's Office of Research and Development (ORD) to reduce water consumption. One project will use a Membrane Bio-Reactor to "mine" sewer water and treat it for reuse at the Installation Vehicle Wash Facility. While the reuse project may not represent a significant quantity of water compared to the total amount of water consumed at Fort Riley, the project may open other opportunities for reuse at the Fort and may serve as a template for portable facilities for treated reuse in deployment zones such as Afghanistan.

In another project, the Fort is implementing a community based social marketing campaign to encourage water conservation by targeting specific water-using behaviors. A component of the campaign will include a post-wide survey developed by students in the K-State Sociology Department to assess knowledge and attitudes on water conservation.

Additional Net Zero activities employed at Fort Riley include installation of low-flow showerheads, toilets and water faucets as well as conversion from traditional turf grasses to drought resistant Zoysia varieties on the Fort's golf course fairways.

In 2013, Kansas Governor Sam Brownback issued a call to action to his administration to develop a 50-Year Vision for the Future of Water in Kansas. Recognizing that water and the Kansas economy are directly linked, the Vision will identify strategies needed to ensure a reliable future water supply to support a growing Kansas population and economy. The Department of Defense (DoD) is one of the largest employers in Kansas. A solid state and federal partnership is essential to ensure Fort Riley and the other Kansas' DoD installations have the long-term water supply necessary to be successful in Kansas.

CITY OF HAYS

Many communities in Kansas have successfully reduced water consumption through systems upgrades and investment in water conservation programs. The City of Hays is one example of a Kansas municipality that is successfully implementing a variety of water conservation practices and policies.

In 1991, during a moderate drought, the City of Hays ran out of water. Existing sources could not keep up with daily demand. Short-term measures such as higher rates and watering restrictions were put in place. At this time, a desperate search for additional supply had begun. After a few years of searching, it became clear to the city additional water sources were a great distance from Hays and very expensive to develop.

After discovering that additional supply would not be easy, the City of Hays began examining its water usage and chose to invest in conservation programs. More than $275,000 was spent incentivizing the purchase of low-flow toilets and over 7,000 shower heads were given away to water customers. The city also spent in excess of $140,000 to incentivize the purchase of high- efficiency washing machines. Regulations were put in place prohibiting outdoor watering during the heat of the day, when a good portion is lost to evaporation, as well as prohibiting water runoff from a property due to improper irrigation. Significant investments were made in effluent water reuse as well. Currently, Hays irrigates several baseball, softball and soccer fields with effluent water as well as the Fort Hays Municipal Golf Course and Bickle-Schmidt Sports Complex. The city decided because of economic development, large water users would not be sought out.

The results of these efforts and investments were striking. Hays now uses less water than they did in the 1970s. In 2013, Hays used 2,200 acre feet of water, down from a peak of 3,600 acre feet in 1993. However, city commissioners and staff were not content to ride the wave of past successes. In 2010, city staff was tasked with taking Hays' water conservation efforts to the next level. To do this, Hays had to look west to cities in the desert southwest and arid mountain west for examples

The successful showerhead replacement program was overhauled and reintroduced. Comprehensive toilet and urinal replacement programs were rolled out and incentive programs were implemented to encourage property owners to replace cool-season turf with drought- tolerant landscaping. The city created several demonstration gardens to show residents drought-tolerant landscaping not only saves water but can also be aesthetically pleasing.

In early 2014, the Hays City Commission adopted the Green Building Code which mandates the use of water-efficient fixtures and best practices for all new construction as well as significant remodels. The Green Building Code also requires smart irrigation controllers and efficiently- designed landscape systems upon installation. The city commission also adopted a comprehensive overhaul of its landscaping regulations. Limits were put in place on the amount of turf and overall area that can be irrigated and mandatory xeriscaping is required.

Hays/Ellis County is the only significant population center in Kansas that has inadequate local water supply. They know they must keep an eye to the future to ensure adequate water is available.

MCCARTY FAMILY FARMS, LLC

Kansas is home to 29 large-scale dairies. McCarty Family Farms, LLC is one example of a Kansas dairy focusing on the role of water conservation in their operations. Almost 15 years ago McCarty Family Farms moved from Pennsylvania to Rexford, KS, to allow their family to fulfill their dairy farming dream. Today, they have three dairy farms in western Kansas. While much of their philosophies regarding their commitment to their cows, people and the land have stayed the same since their family began milking in 1914, they have made many changes to take better care of their cows and natural resources.

Transitioning from a farm milking 150 cows in a water abundant area to a herd of over 7,000 head in a water scarce area required the McCarty Family to adapt their management style to accommodate the

climate of western Kansas. Maximizing cow comfort and productivity while minimizing water use was a challenge the McCarty Family was not accustomed to facing but realized it was one that could be overcome with the right mindset, practices and partnerships.

Water supply issues in Kansas have impacted the thought process of the McCarty family in many ways. First and foremost, conservation of water as well as the maximization of productivity of each gallon pumped is a paramount thought on all of the McCarty family's operations. This has led to utilizing less water intensive crops (i.e. sorghum) to feed their herds, reexamining how they do business (i.e. condensing milk) to even where they focus their growth.

In 2010 they began their partnership with the Dannon Company and the McCarty family began construction of a condensed milk processing plant at the Rexford Dairy site. While it took eight months to build and a significant financial investment, the McCarty Family found it has been the right decision.

The decision to build the state-of-the-art milk processing plant was based on a multitude of benefits not only for them but also the Dannon Company, consumer and other stakeholders. First, the McCarty-Dannon relationship, with the processing plant as its keystone, served as a means of creating stable prices for both parties in an otherwise volatile market. This coupled with additional benefits such as reduced environmental impact, increased traceability, single source product streams and increased consumer connection for the McCarty Family led to a very unique and innovative business relationship.

The plant has allowed the extraction of more than 14 million gallons of water from the milk each year and more than 39,000 gallons every day. This has led the McCarty Family to not only operate the milk processing plant but increase the herd size on site by 500 head and use less water than before. The extracted water is reused for animal and crop care, including cow cleaning and irrigation, helping move the dairy closer to becoming a water-neutral operation. Water is even removed from the milk before it is shipped to Dannon, ensuring all water stays in western Kansas and at the dairy. Because the milk is condensed, there has also been a 75 percent reduction in the number of trucks and amount of fuel required to haul milk from the farm.

McCarty Family Farms have made it their motto to live to improve their environment, the communities they live in as well as be as progressive as possible when it comes to conserving their water resources. As a result of the management practices, their farms earned an environmental review certification by Validus and were named the 2013 Innovative Dairy Farmer of the Year. They know their business survival is dependent on the communities they live in and often say when their communities grow and prosper, they do as well. Most recently they were one of three dairies in the United States to win the U.S. Dairy Sustainability Award by the Innovation Center for U.S. Dairy.

NATIONAL COOPERATIVE REFINERY ASSOCIATION (NCRA) AND CITY OF MCPHERSON

Cooperative water supply and conservation planning among a municipality and their local businesses can result in mutual long term benefits to an area's economy and the natural resources. The benefits of this type of cooperative planning are illustrated through the National Cooperative Refinery Association (NCRA) and the City of McPherson.

For the past several years, NCRA and the city of McPherson have been studying their local water challenges. The challenges the refinery has been encountering center on the quality and quantity of water

available to them. The city of McPherson and NCRA use ground water from the Equus Beds aquifer which is the principal source of fresh and usable water in south central Kansas. The aquifer underlies portions of a four-county area. Both entities have noticed the aquifer located within the boundaries of the McPherson Intensive Groundwater Use Control Area (IGUCA) has been declining on average approximately one foot annually for the last 10 years. The quality of water has declined due to a plume, contributing elevated levels of calcium and chloride, in the immediate area. NCRA utilizes its water to provide steam and cooling water for its process units so the contaminants must be removed prior to use in their systems.

In order to provide a sustainable water source for its refinery, NCRA first reviewed alternate sources of water. Due to its location, the only sources of water available are those from the aquifer. Any surface water available is at least 30 miles away which was determined unfeasible to transport. Another source that was investigated was secondary effluent water from the McPherson wastewater treatment facility. This source was found to be a viable and acceptable source. An agreement was reached with the city of McPherson to provide approximately 700 gallon per minute of reclaimed wastewater to NCRA. Infrastructure for the collection and transport of the water to the refinery had to be constructed. This installation is nearing completion and is expected to be functional by September 2014.

Another water source that was investigated was the east chloride water. This option is water from the aquifer that is currently part of a remediation project to "clean up" a chloride plume in the aquifer. Studies have shown the primary source of waters high in chloride from the contamination plume is oil brine from an oil field discovered in the 1930s. Elevated levels of chlorides and calcium from the contamination plume are not compatible with the refinery's current treatment technology. A new water treatment facility is now being built and it has been estimated that 700 gallon per minute of this water will be utilized in the future once constructed.

The final piece that needed to be addressed for NCRA was the water quality of the current water sources and the new alternate sources. To address the quality demands of the produced water, NCRA designed a treatment process to meet these stringent requirements. The process has been engineered and is currently being constructed. The estimated completion and startup of the facility is spring 2015. The water treatment facility will consist of microfiltration, nanofiltration and reverse osmosis technology. The process was designed to be efficient and will include a "backwash" reuse system that will reuse some water within the newly designed water treatment facility.

Once completed, NCRA is expecting to reduce water usage from the aquifer by about 1400 gallons per minute or about two million gallons per day. One of the new water sources will be the east chloride "plume" water, so remediation of the aquifer water will still be taking place but now as a result of implementing technology, the water will be used instead of wasted.

The city of McPherson also has similar sentiments regarding a sustainable water source for its customers. In addition to selling reclaimed wastewater to the refinery, McPherson has also worked to reduce the local aquifer demand. In the early 1990s the Board of Public Utilities purchased four irrigated farm quarters in the immediate vicinity of the city's well field and placed the water rights in the Division of Water Resources Water Right Conservation Plan. In 1994 an additional quarter was purchased. Recently the board decided to remove the irrigation equipment because of unsustainable pumping rates. McPherson has found these steps have reduced the local aquifer demand by approximately 500 acre feet per year.

McPherson and NCRA believe the new plant and water sources will provide a long term source of reliable water while being a good steward to the environment. The construction of the new water treatment plant and facilities will cost NCRA over $60 million, but it has been deemed necessary and appropriate in order to provide the McPherson community, refinery and surrounding area with a sustainable water source.

SHERIDAN-6 LOCAL ENHANCED MANAGEMENT AREA (LEMA)

A guiding principle of the Vision for the Future of Water Supply in Kansas is locally driven solutions have the highest opportunity for long term success. The Sheridan-6 Local Enhanced Management Area (LEMA) is on example of a success locally driven water conservation plan.

In 2001 the *Kansas Water Plan* called for water management practices that would extend and conserve the life of the Ogallala Aquifer which encompasses areas of 10 northwest counties, Farmers and area residents of Groundwater Management District No. 4 knew something must be done to address the declines in the ground water sources if they wanted to continue to have viable communities and industry. The GMD#4 board chose to implement recommendations determined by two state-appointed committees to update their Revised Management Plan which led to establishing the district's High Priority Areas (HPAs).

Sheridan-6 (SD-6), 99 square miles in Sheridan and Thomas counties, was one of the determined HPAs. Initial conversations and community meetings in SD-6 began in November of 2008. It was determined there was an overwhelming desire from attendees to preserve the natural resource of water for economic sustainability in the SD-6 HPA and provide an opportunity for continued sustainability.

Changing a mindset can seem almost impossible sometimes, but the GMD#4 Board of Directors and staff worked extensively with community members explaining the severity of the water declines in their area. The community was urged to be a part of their own solution, for their own benefit and that of the future generations. Through numerous meetings and discussions over the next four years, the SD-6 LEMA proposal was created by the locals.

The SD-6 LEMA requires that all water rights therein (non-domestic) entered into a five-year plan to use nearly 20 percent less water to slow Ogallala Aquifer declines. It allows an annual average of 11 inches/ acre or 55 inches over a five year period giving producers the flexibility on when to use their crop water.

In April 2012, the LEMA Bill (SB 310) was passed into law and the SD-6 Enhanced Management Proposal was submitted in July 2012. The GMD #4 then received approval notice from Kansas Department of Agriculture-Division of Water Resources in August and was followed by two public hearings and an independent hearing officer's report to the Chief Engineer October 2012. The Final LEMA Order of Designation was signed on April 17, 2013.

Now after having a full year of data, GMD#4 and SD-6 is proud to share the first year of the LEMA was successful. The annual average irrigation water applied was 10.29 inches/acre or 20,775 acre feet for irrigation and other uses; below the use goal of 22,800 acre feet. Water level declines as measured in January of 2014 were at 0.47 feet, lower than the previous five years, when annual declines in the LEMA area ranged from 0.96 to 2.00 feet.

While some producers applied up to 18 inches/acre due to the drought, most worked to adjust to less irrigation with increased water management, shifts in crops, planting density or acres. Rains in June were timely, helping farmers to have reportedly near normal production levels. Insurance for limited irrigated crops was available through USDA Risk Management Agency, a first time for this option.

This is the first locally developed and legally binding conservation plan made in the Ogallala High Plains Aquifer with many hopes it will be replicated across the region and even in other states. This leading example has been featured in several publications across the nation as well. The LEMA has sparked a tremendous increase in dialogue for others, emphasizing the importance of local problem solving, involvement and education.

SUPREME FEEDERS

While stock water use represents less than one percent of the total statewide reported water use, water conservation at a feedyard plays a role in a region's water supply conditions and can result in efficiencies and cost savings at the operation. An example of Kansas feeder successfully implementing water conservation activities is Supreme Feeders.

A couple years ago Supreme Feeders, Kismet, KS, received a letter from the Kansas Department of Agriculture-Division of Water Resources saying they had over-used their annual water allocation and needed to be in compliance by the next year. Supreme Feeders immediately wanted to begin cutting back on water usage as much as possible throughout the entire yard.

After evaluating areas of usage, they looked to easier solutions they could address first. Their first step was to look at their washing system. They chose to wash the equipment and roll stock fewer times per month while still maintaining cleanliness. Second, while a safe and healthy environment is key to the feedlot, they determined they could wash the hospital and processing barns fewer times per month in order to conserve, while still maintaining a safe standard. Third, they began to wash their water tanks biweekly, whereas, they had been washing the tanks every week. Once the easier conservation options had been implemented, the feedlot began researching other alternatives for more efficient water management and conservation practices they could execute.

The research presented staff with examples from JBS Five Rivers Cattle Feeding, LLS, a Colorado feedyard. JBS uses a water filtration system that filters the over flow from their water tanks to conserve water. Supreme Feeders contacted JBS about the filtration system and was invited to come examine the system and learn how it could fit their specific needs.

Supreme Feeders chose to replicate the same system at their feedyard. They chose to run a six inch underground drain line for each section of pens to send all the over flow water to a collection point. After collected, the reclaimed water is pumped to the treatment building to a set of filters and a UV light which clears the water of any particles and pathogens it may contain. This filtered process results in clean water, free of harmful bacteria and safe for the cattle to drink and reuse throughout the feedyard.

The decision to implement the system meant Supreme Feeders didn't have to reduce the feedyard capacity approximately 68,000 head. They have found it to be a good experience and encourage other feedyards to consider implementing this system in their own operations. In November of 2013 they invited several feedlots, the Kansas Livestock Association and other entities to a field day to feature the

system and what they had learned regarding their water management practices. They shared with attendees the cost to treat the water was minimal in comparison to hauling water or decreasing the number of cattle to feed.

The reclamation system has been running for more than a year now and the recycled water accounts for approximately 20 percent of the feed yard's total usage. Supreme has found they are using less than their appropriated amount by about 200 acre-feet. Supreme Feeders has saved more than 90,000,000 gallons of water since implemented and has found they are now pumping 20 percent less water from their water wells. This has proved to be a great example of a future conservation measure that didn't mean an inventory reduction for the feedyard.

FIRSTWATER AG, INC

Water where you need it is a concept entrepreneurs in Kansas such as FirstWater Ag make a reality for producers in agricultural water use and crop production environments. With knowledge and experience in systems for water conservation and efficiency on irrigation machines, FirstWater Ag was formed in Atwood, KS in 2013.

The customized zone control irrigation systems at FirstWater Ag gives producers greater control and precision in the application of water by creating individually controlled watering zones and times along the length of an irrigation machine. This allows producers to treat variable parts of the field with different amounts of water. The FirstWater Ag zone control system dates back to commercialization in 2001 when it was first used on the market and has been a pioneering leader in this technology. The system can be retrofit onto virtually any brand or any age of center pivot or lateral irrigation machine. With past systems installed in many states more precise control of irrigation water can benefit many different geographies and production environments.

FirstWater Ag customized zone control irrigation system can address many factors for producers such as topographic variability, overlapping pivots, chemigation and fertigation applications, waste water or livestock effluent application through irrigation, different soil types and capacities, water runoff, bogging down or getting stuck in wheel tracks and simply avoiding water, chemicals or fertilizers in ponds, grass, roads, creeks or other non-crop areas.

The systems are built around a controller that is installed at the pivot or lateral. The controller can tie into the speed of the machine as well as the control of sprinkler zones that are grouped together. In settings where zones are desired, control valves are placed on each sprinkler point along the span with multiple valves/sprinklers controlled together in a zone. Up to 48 zones can be installed along the length of the space and with a GPS signal, the controller can change the action of those every 1 degree of change in the machine angle. This creates potential for more than 17,000 individually defined water areas in a full center pivot field.

University of Georgia research has shown water savings of 8-20 percent annually all while producing equal or better crop yields and reducing pumping costs. A FirstWater Ag system in a field during the winter of 2013 is projected to cut irrigation water use by 25% and save an estimated 40 million gallons per year in just one field.

Producers, crop consultants and other trusted agronomic advisors have the tools and freedom to define the watering prescriptions for their specific fields having the best knowledge of those circumstances. In addition to control of applied irrigation water, FirstWater Ag is bringing forward a multi-probe soil moisture sensing system that will create significant synergy in water management approaches allowing growers to not only see which parts of their field may be wet or dry, but then to verify the effect of the watering prescriptions they apply.

FirstWater Ag places a high value on relationships with customers and partners in finding ways to work together in managing water more efficiently. Tools and strategies will continue to be developed that meet the needs of irrigated producers as well as steward the Ogallala-High Plains aquifer and all other water resources.

WENSTROM FARMS

Wenstrom Farms is one of many examples in Kansas of how the adoption of irrigation technology combined with land management can results in significant water savings. Richard and Jane Wentsrom's farm sits on the Great Bend Prairie Aquifer near Kinsley, KS. Raising irrigated corn and soybeans with some alfalfa and small amount of wheat over the limited water resource, they know the extreme importance of irrigation scheduling.

As far back as the 1970s, Richard began gathering data and monitoring water use. He started implementing computer software programs starting in 1980, before many farmers even had computers. Richard was known as one of the first large-scale irrigators who used soil-based irrigation scheduling techniques but was also an early adopter of climatic- or Evapotranspiration (ET)- based irrigation scheduling.

He knew that irrigation scheduling is one of the keys to saving water and more than 20 years ago, began using a computerized irrigation scheduling system with 24 center pivots on his 4200 acre farm. Wenstrom soon realized significant savings as the system he used took into account temperature, humidity, wind, rainfall and other climate data to determine when and how much water should be applied at any given time. The system also enabled him to play out various scenarios for the center pivot to ensure highest efficiency.

He found built-in flexibility in the program which helped him to see the value in identifying the correct speed for the pivots to help be most efficient; a critical piece that continues to set his irrigation scheduling system apart from others, even contemporary systems.

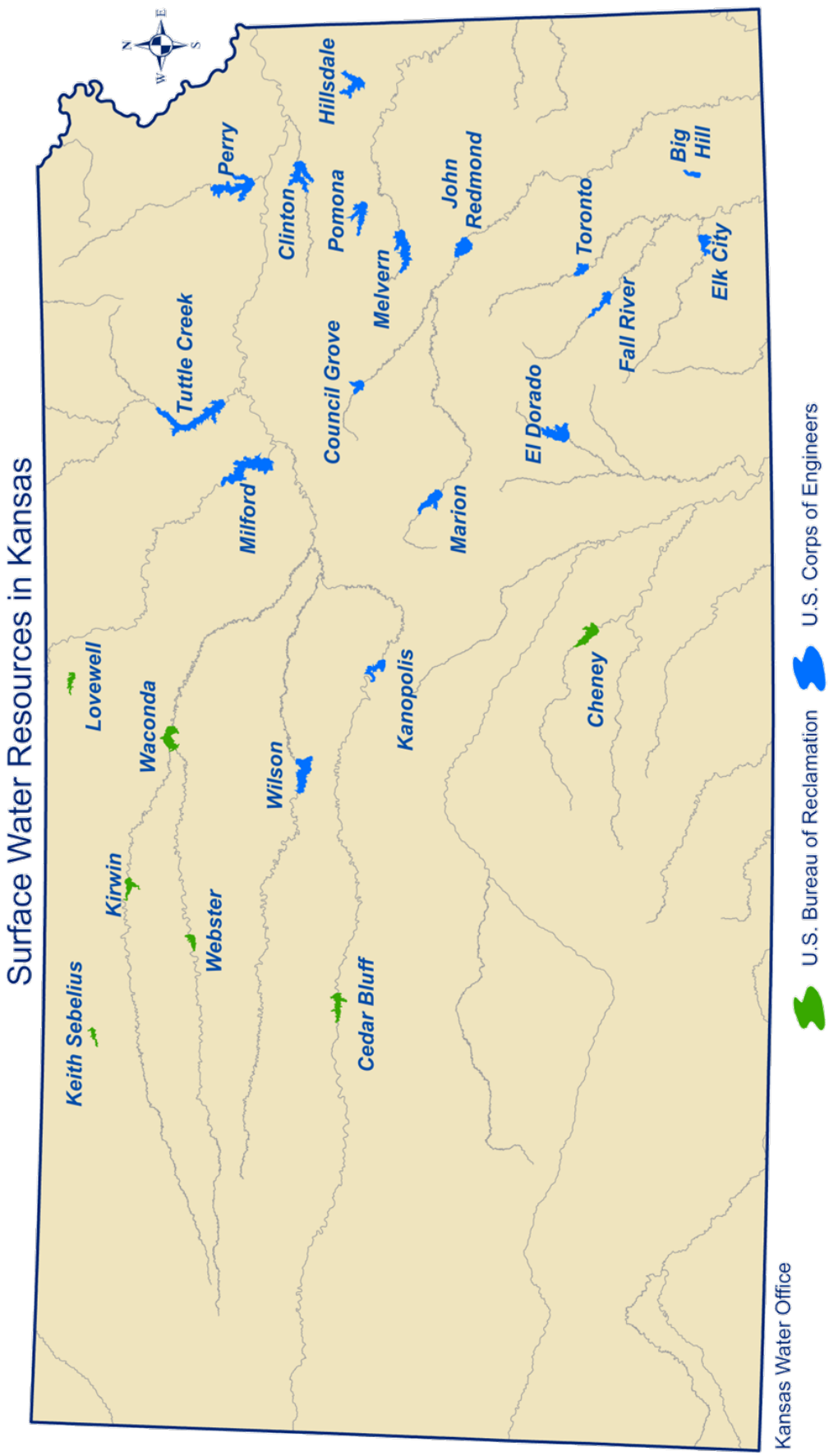
He promotes irrigation scheduling saves water, energy, and money with estimates of up to 35 percent savings in water and energy. Wenstrom estimated that his system saved between 20- 30 acre feet of water per pivot compared to irrigation regimes that didn't use scheduling in the 1980s. Fuel savings for the 24 center pivots were in the range of 500-600 million cubic feet of natural gas per year.

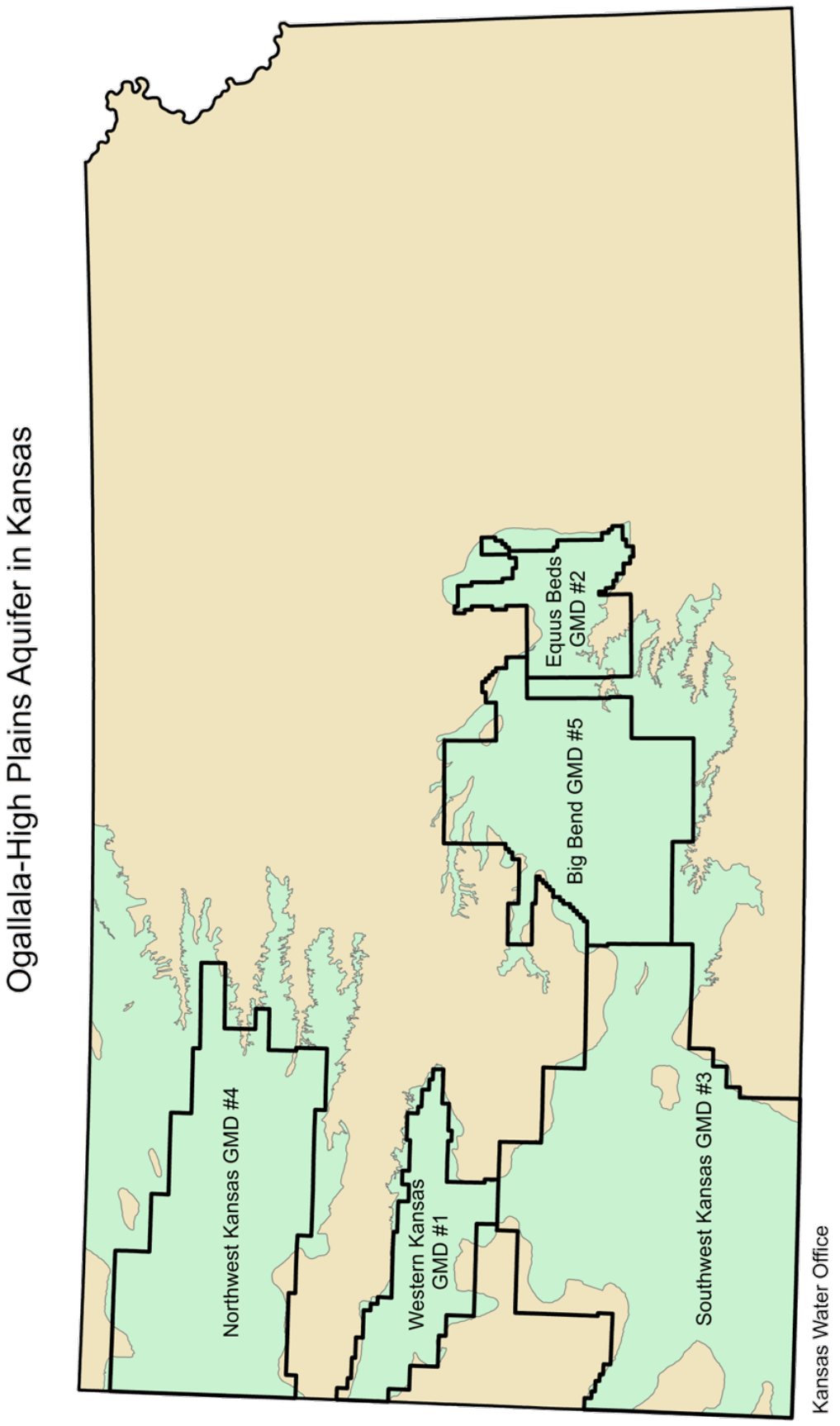
The examples set at Wenstrom Farms has led to him being board president of The Water Protection Association of Central Kansas (Water PACK), an organization with members consisting of ag producers and related businesses from six south-central counties who serve as a proactive voice for irrigated agriculture in the area. Richard is also one of the producers to participate and conserve water in the Central Kansas Water Bank. Recently Wenstrom Farms was named a model innovator for the Climate+Energy Project.

Richard has seen different techniques work for different people. For farmers who irrigate, they do so with the intention of producing high yields. He knows his irrigation scheduling impacted yields but also reflects the values of resource conservation and good stewardship which runs deep in Kansas.

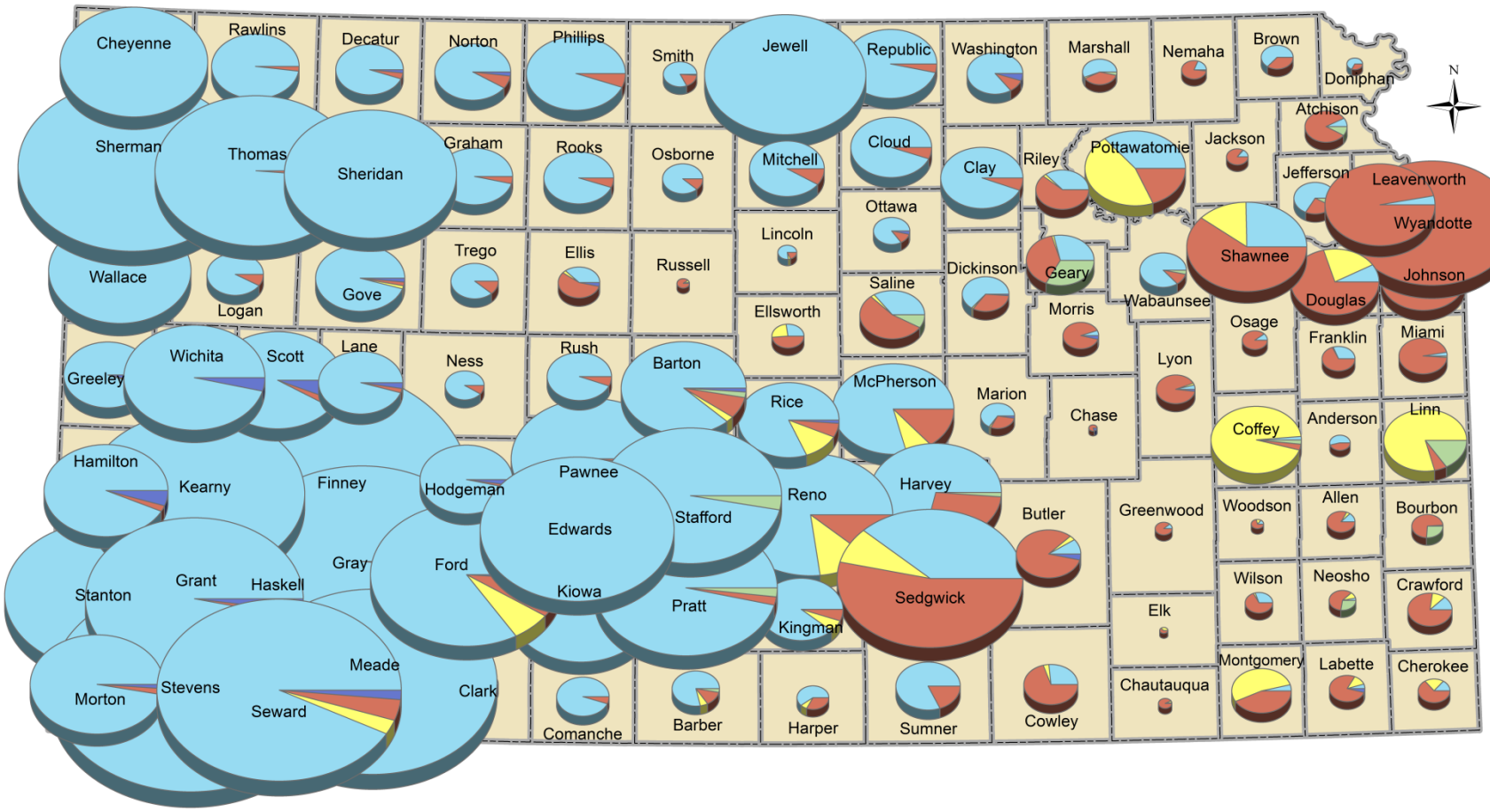
CONDITION ATLAS

Following are several maps and figures that reflect water use, sedimentation and storage capacity in the state's federal reservoirs and the estimated usable lifetime and storage in the Ogallala-High Plains Aquifer in Kansas. An additional on-line tool will be developed to allow Kansas citizens to review information specific to their region.


Surface Water Resources in Kansas
Perry
Hillsdale
Clinton
Pomona
John Redmond
Big Hill
Toronto
Elk City
Tuttle Creek
Council Grove
Melvern
Fall River
El Dorado
Milford
Marion
Lovewell
Waconda
Wilson
Kanopolis
Cheney
Kirwin
Webster
Keith Sebelius
Cedar Bluff
U.S. Bureau of Reclamation
U.S. Corps of Engineers
Kansas Water Office


Ogallala-High Plains Aquifer in Kansas
Northwest Kansas GMD #4
Western Kansas GMD #1
Big Bend GMD #5
Equus Beds GMD #2
Southwest Kansas GMD #3
Kansas Water Office

2012 Water Use By County



Data Sources:
Division of Water Resources, Water Use Program
Kansas Water Office, Water Marketing Program

40 20 0 40 Miles

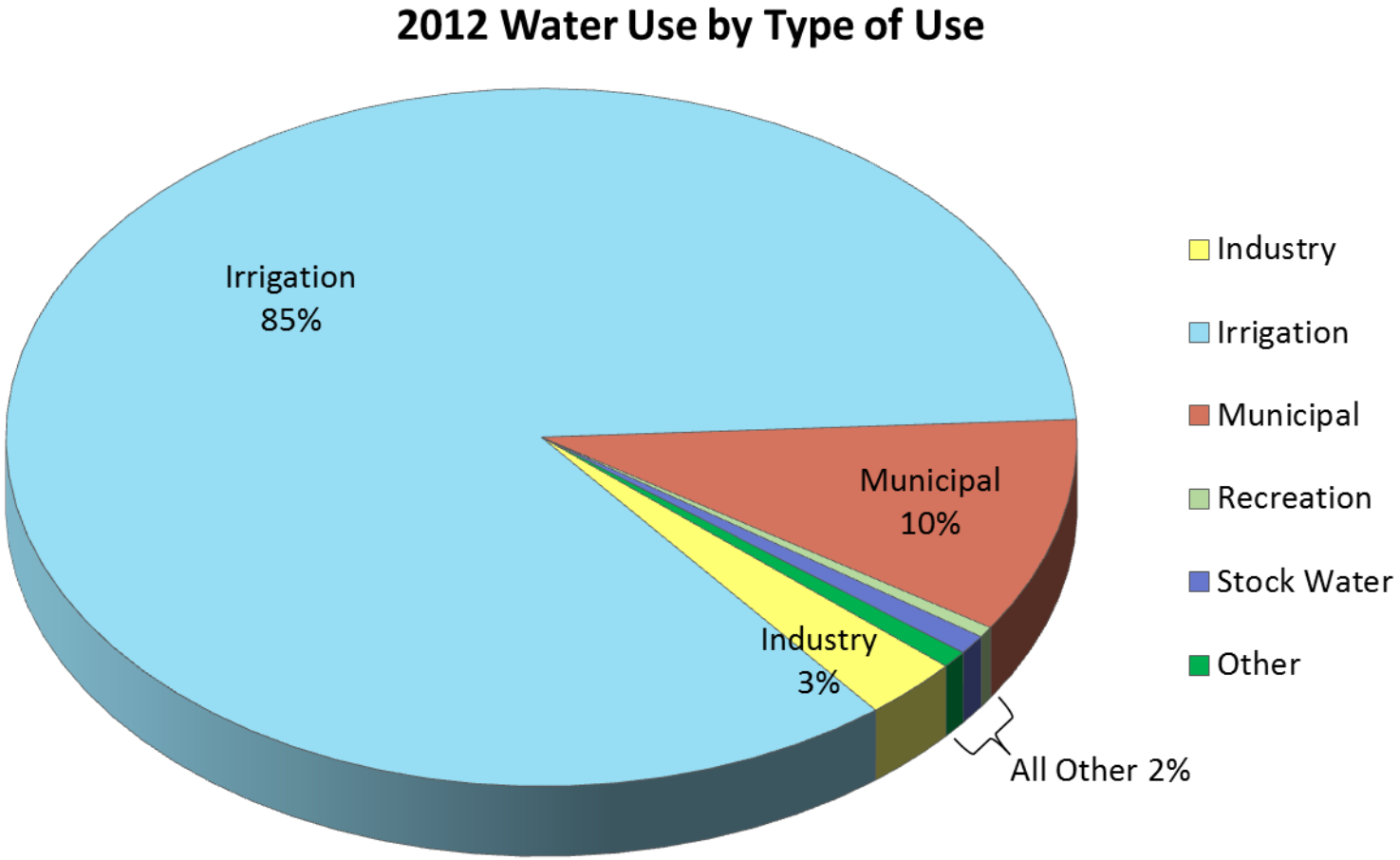
Kansas Water Office October 2014

Water Use by Type of Use

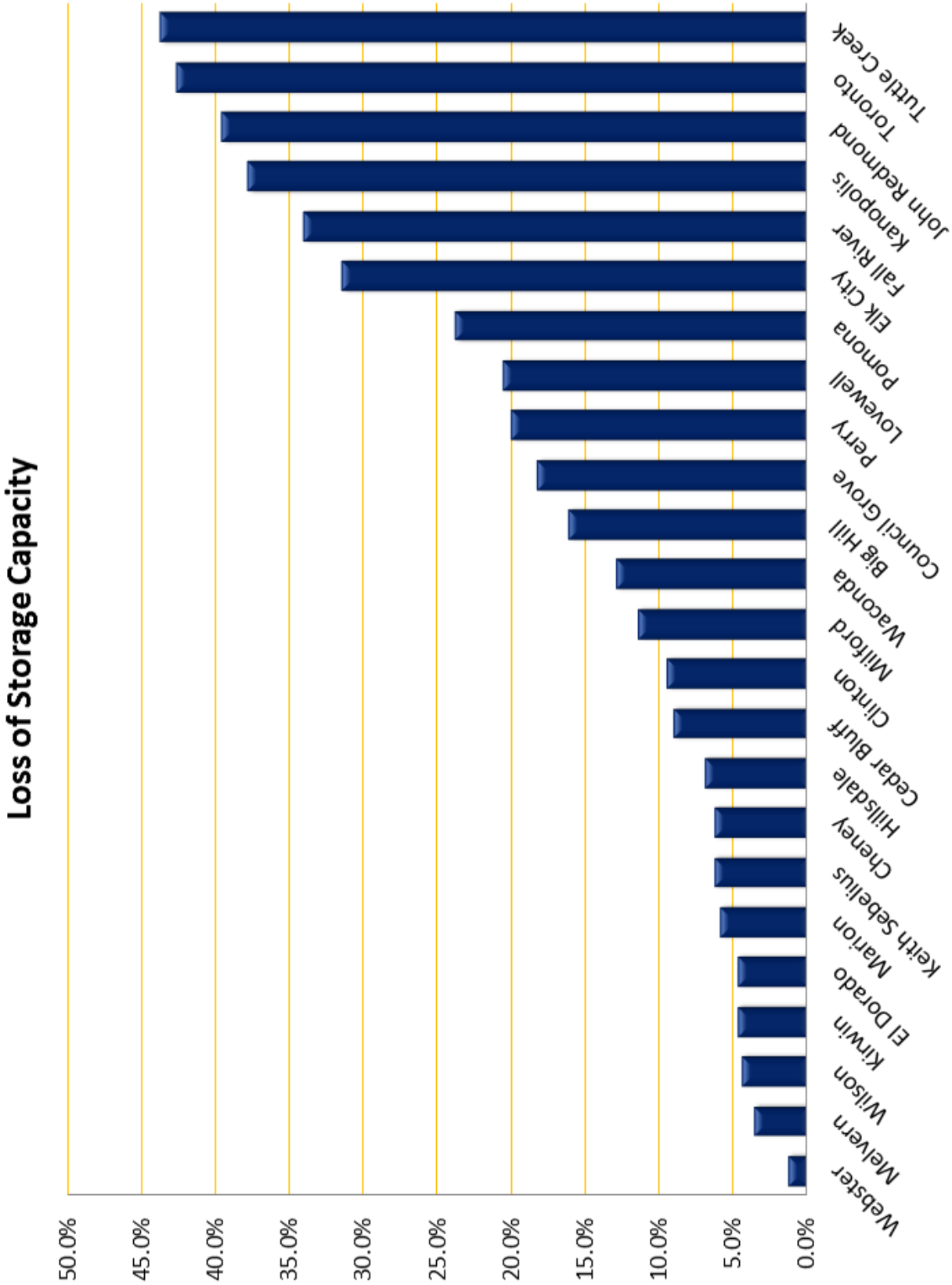
Acre Feet

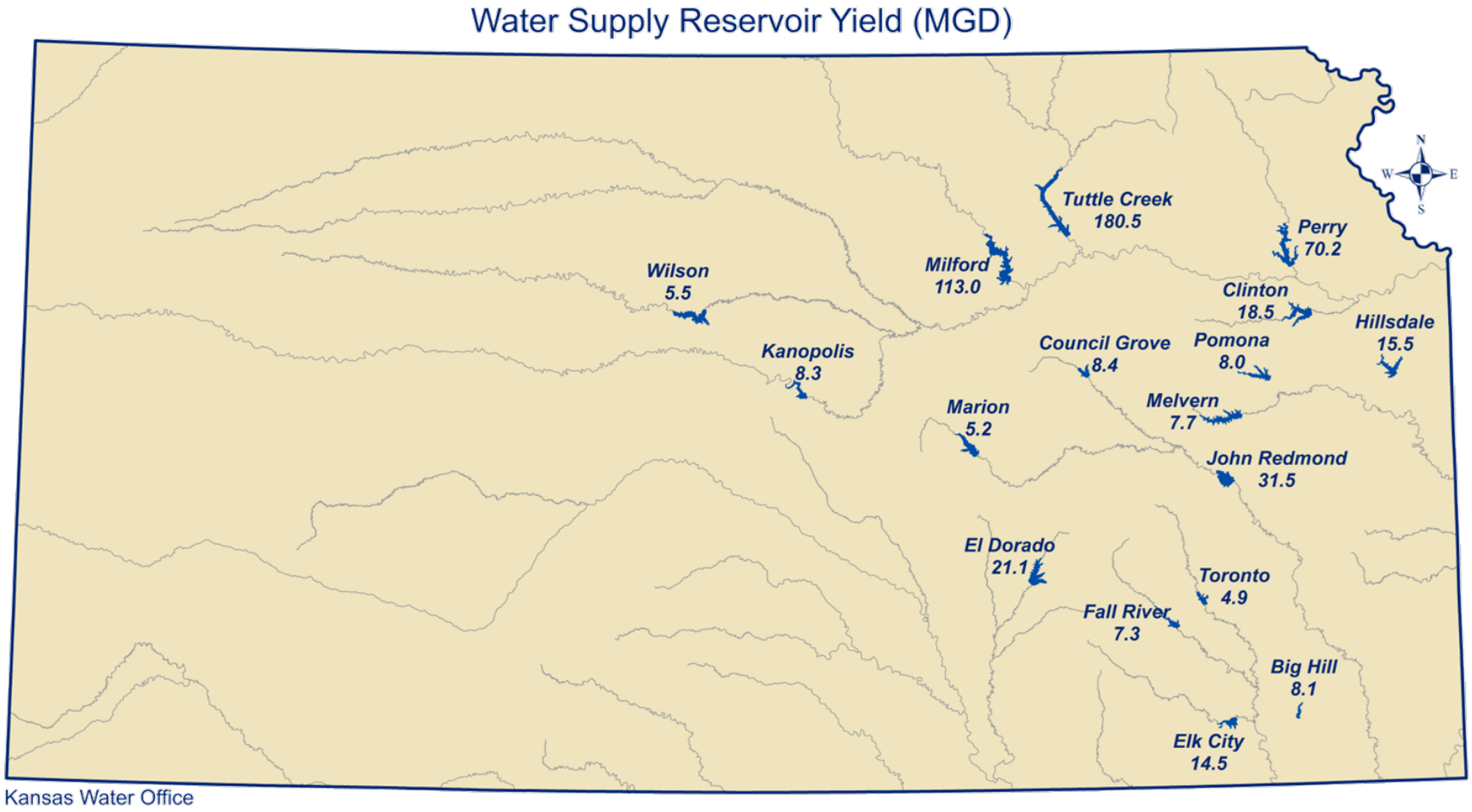
15,000

Irrigation
Industry
Municipal
Recreation
Stock Water



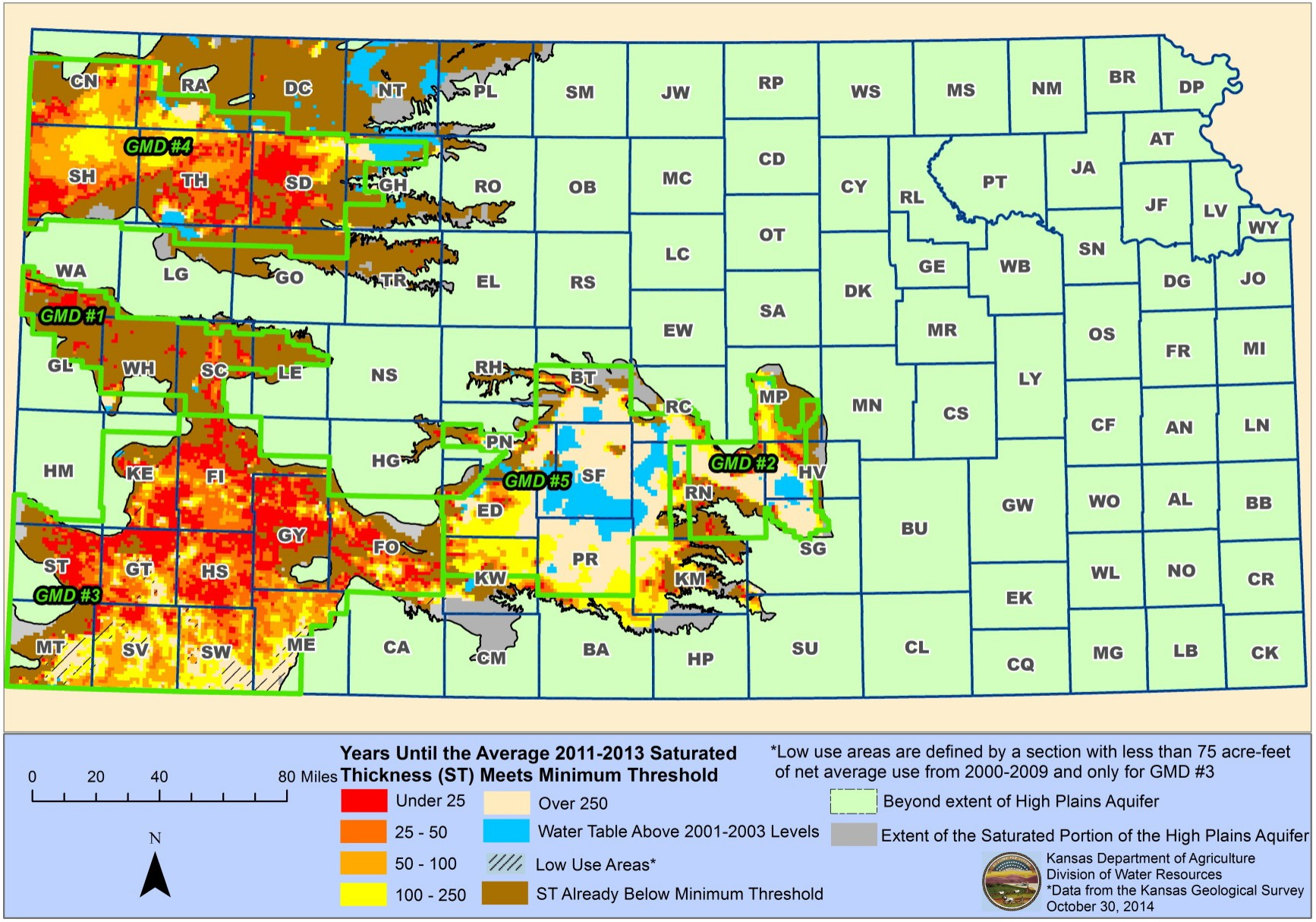
Sources:
Division of Water Resources, Water Use Program
Kansas Water Office, Water Marketing Program

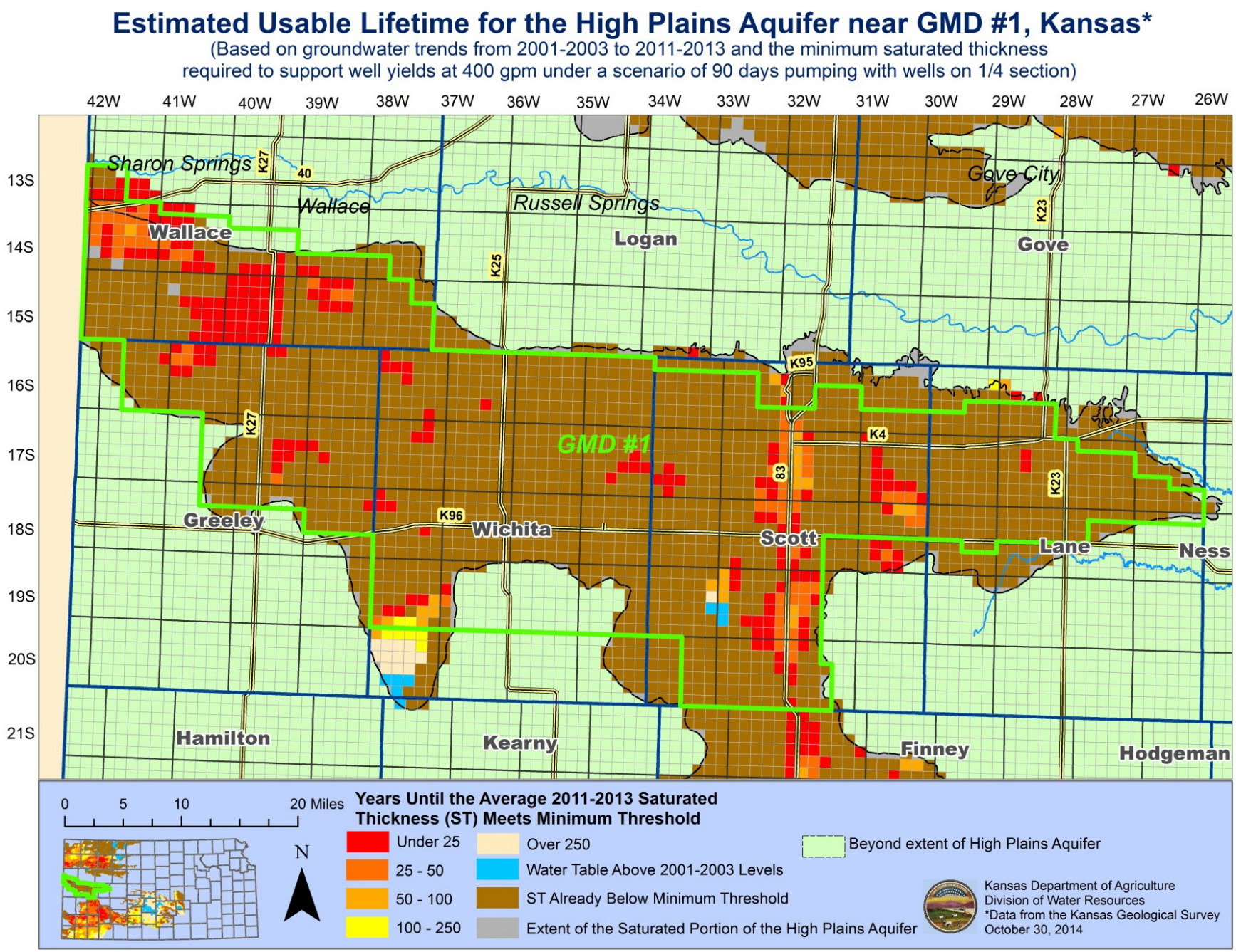

Loss of Storage Capacity
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Webster
Melvern
Wilson
Kirwin
El Dorado
Marion
Keith Sebelius
Cheney
Hillsdale
Cedar Bluff
Clinton
Milford
Waconda
Big Hill
Council Grove
Perry
Lovewell
Pomona
Elk City
Fall River
Kanopolis
John Redmond
Toronto
Tuttle Creek


Water Supply Reservoir Yield (MGD)
N
W
E
S
Tuttle Creek
180.5
Perry
70.2
Milford
113.0
Wilson
5.5
Clinton
18.5
Hillsdale
15.5
Council Grove
8.4
Pomona
8.0
Kanopolis
8.3
Melvern
7.7
Marion
5.2
John Redmond
31.5
El Dorado
21.1
Toronto
4.9
Fall River
7.3
Big Hill
8.1
Elk City
14.5
Kansas Water Office

Estimated Usable Lifetime for the High Plains Aquifer, Kansas*

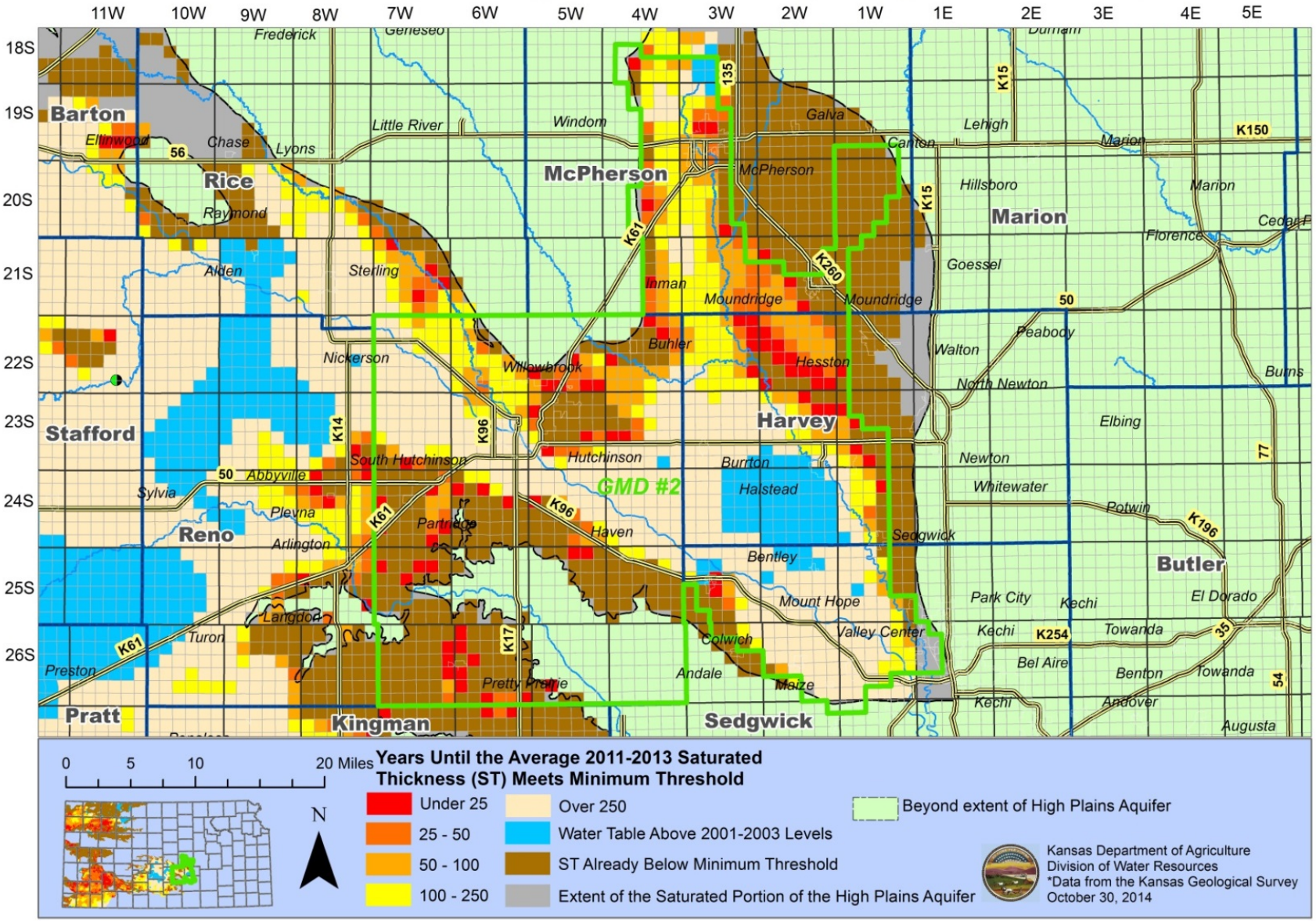
(Based on groundwater trends from 2001-2003 to 2011-2013 and the minimum saturated thickness required to support well yields at 400 gpm under a scenario of 90 days pumping with wells on 1/4 section)




Estimated Usable Lifetime for the High Plains Aquifer near GMD #1, Kansas*
(Based on groundwater trends from 2001-2003 to 2011-2013 and the minimum saturated thickness required to support well yields at 400 gpm under a scenario of 90 days pumping with wells on 1/4 section)
42W
41W
40W
39W
38W
37W
36W
35W
34W
33W
32W
31W
30W
29W
28W
27W
26W
13S
14S
15S
16S
17S
18S
19S
20S
21S
Sharon Springs
Wallace
Wallace
Russell Springs
Logan
Gove City
Gove
GMD #1
Greeley
Wichita
Scott
Lane
Ness
Hamilton
Kearny
Finney
Hodgeman
K27
40
K25
K23
K95
K4
83
K96
0
5
10
20 Miles
N
Years Until the Average 2011-2013 Saturated Thickness (ST) Meets Minimum Threshold
Under 25
25 - 50
50 - 100
100 - 250
Over 250
Water Table Above 2001-2003 Levels
ST Already Below Minimum Threshold
Extent of the Saturated Portion of the High Plains Aquifer
Beyond extent of High Plains Aquifer
Kansas Department of Agriculture
Division of Water Resources
*Data from the Kansas Geological Survey
October 30, 2014

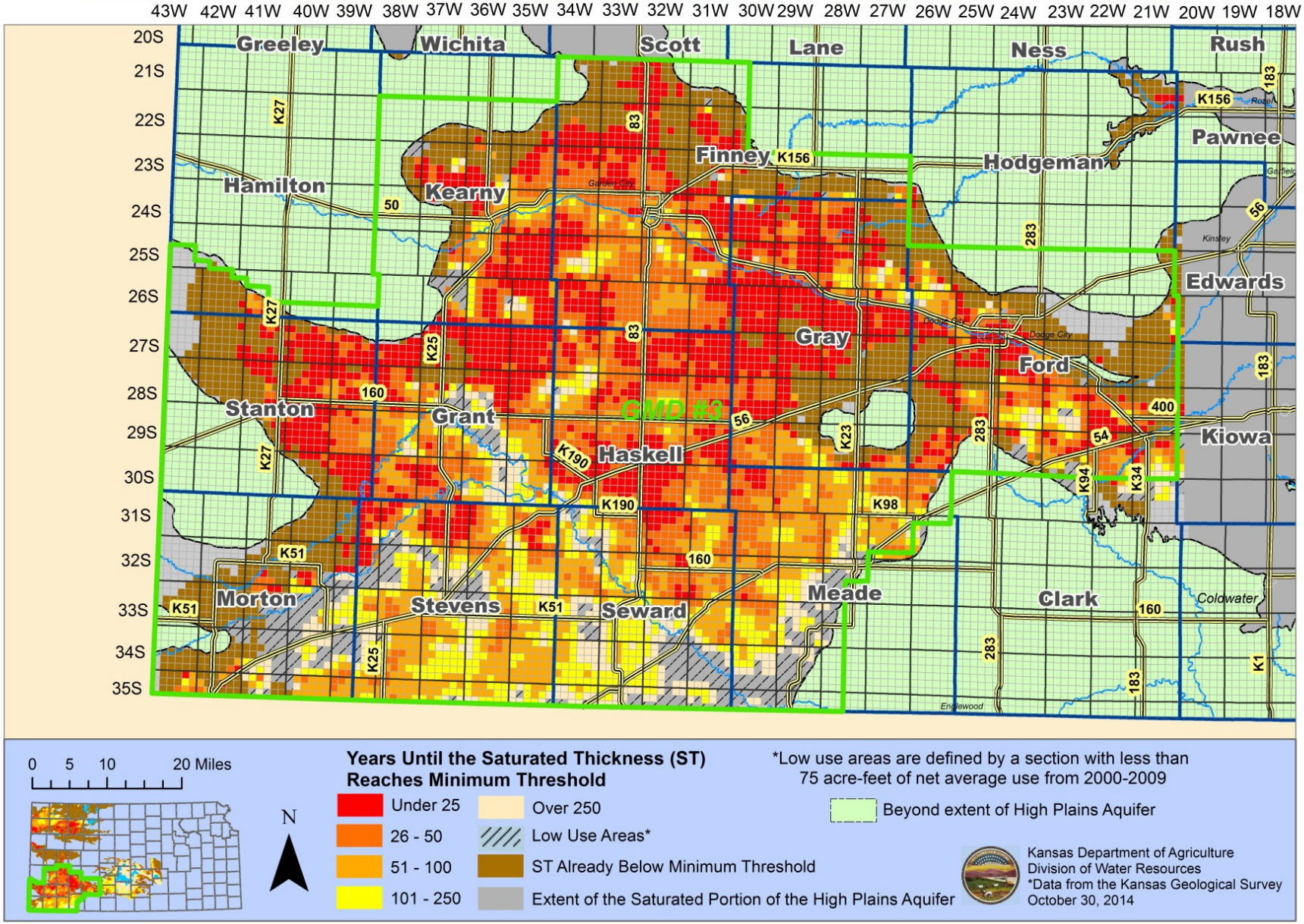
Estimated Usable Lifetime for the High Plains Aquifer near GMD #2, Kansas*

(Based on groundwater trends from 2001-2003 to 2011-2013 and the minimum saturated thickness required to support well yields at 400 gpm under a scenario of 90 days pumping with wells on 1/4 section)



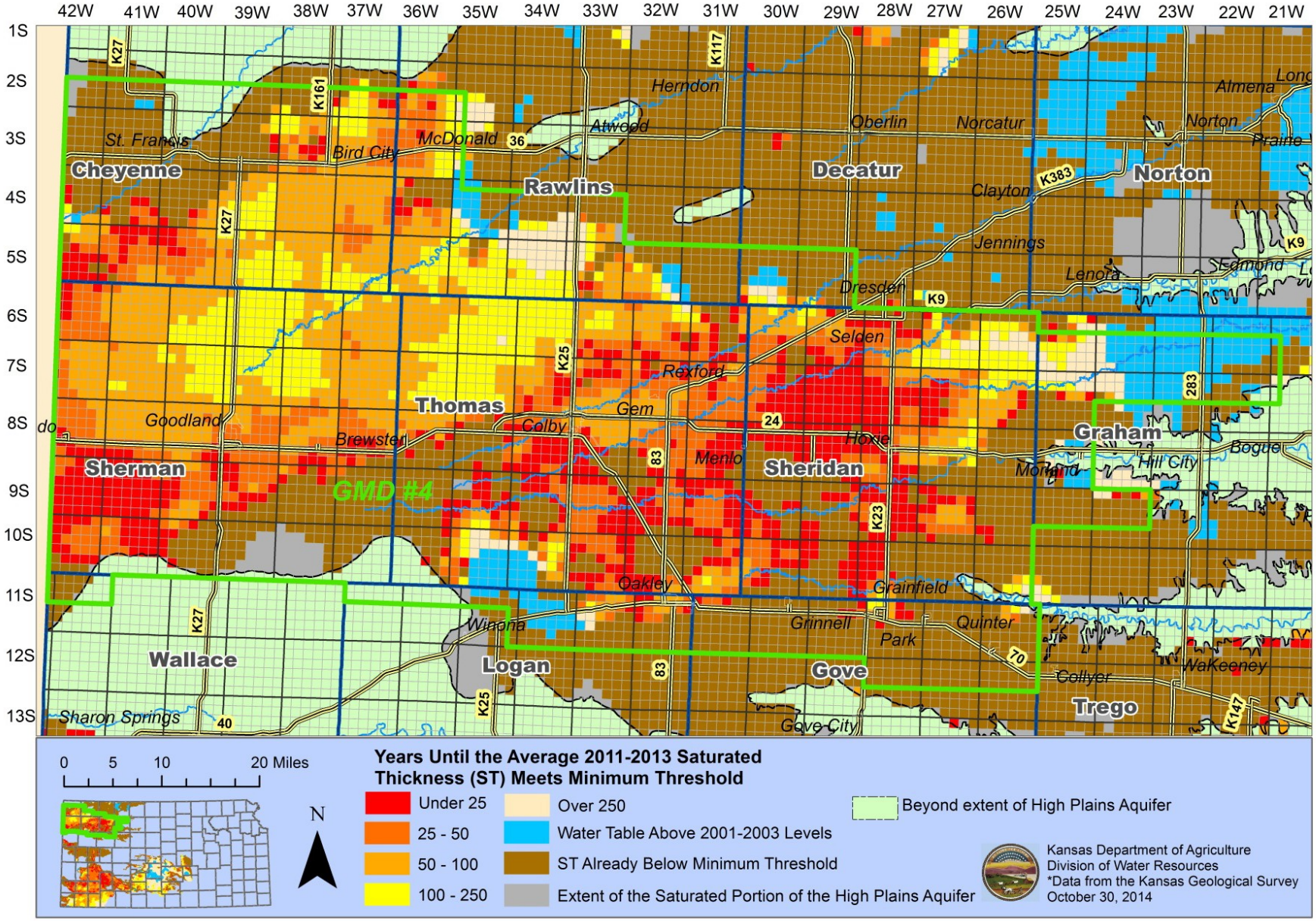
Estimated Usable Lifetime for the High Plains Aquifer near GMD #3, Kansas*

(Based on KGS Section Level Data for the saturated thickness (2010-2012), the revised minimum saturated thickness required to support 400 gpm under a 90 day pumping scenario with wells on 1/4 section based on GMD3 Model K, GMD3 Model average specific yield for water level elevation 2008 and 1947 to 2007 average recharge, and DWR Section Level Data for the 2-mile radius average groundwater use density 2000-2009)



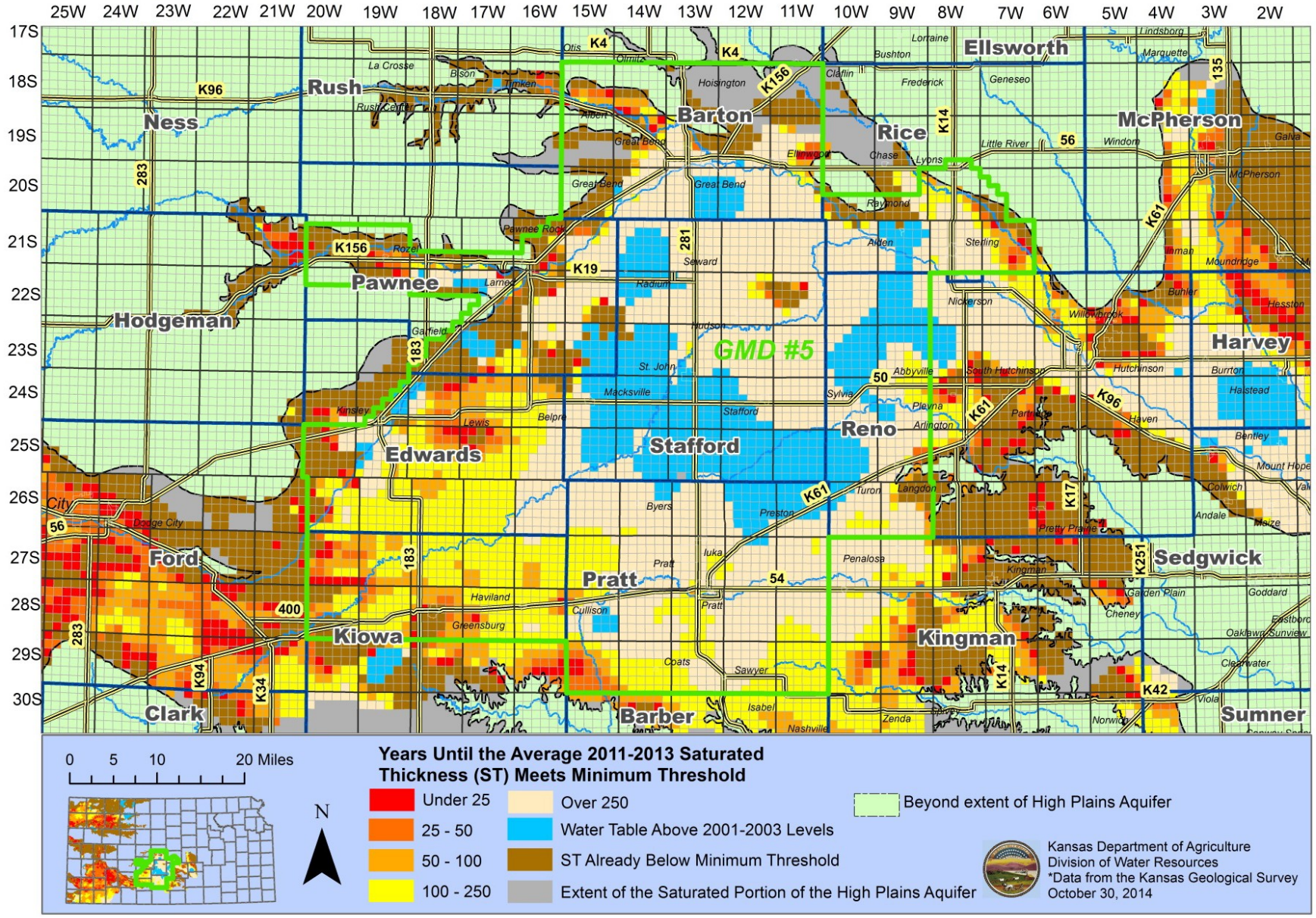
Estimated Usable Lifetime for the High Plains Aquifer near GMD #4, Kansas*

(Based on groundwater trends from 2001-2003 to 2011-2013 and the minimum saturated thickness required to support well yields at 400 gpm under a scenario of 90 days pumping with wells on 1/4 section)



Estimated Usable Lifetime for the High Plains Aquifer near GMD #5, Kansas*

(Based on groundwater trends from 2001-2003 to 2011-2013 and the minimum saturated thickness required to support well yields at 400 gpm under a scenario of 90 days pumping with wells on 1/4 section)



VISION TEAM AND RESOURCES

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RESOURCES

For more information about the Vision and to provide additional feedback, visit:

http://www.kwo.org/50_Year_Vision/50_Year_Vision.htm

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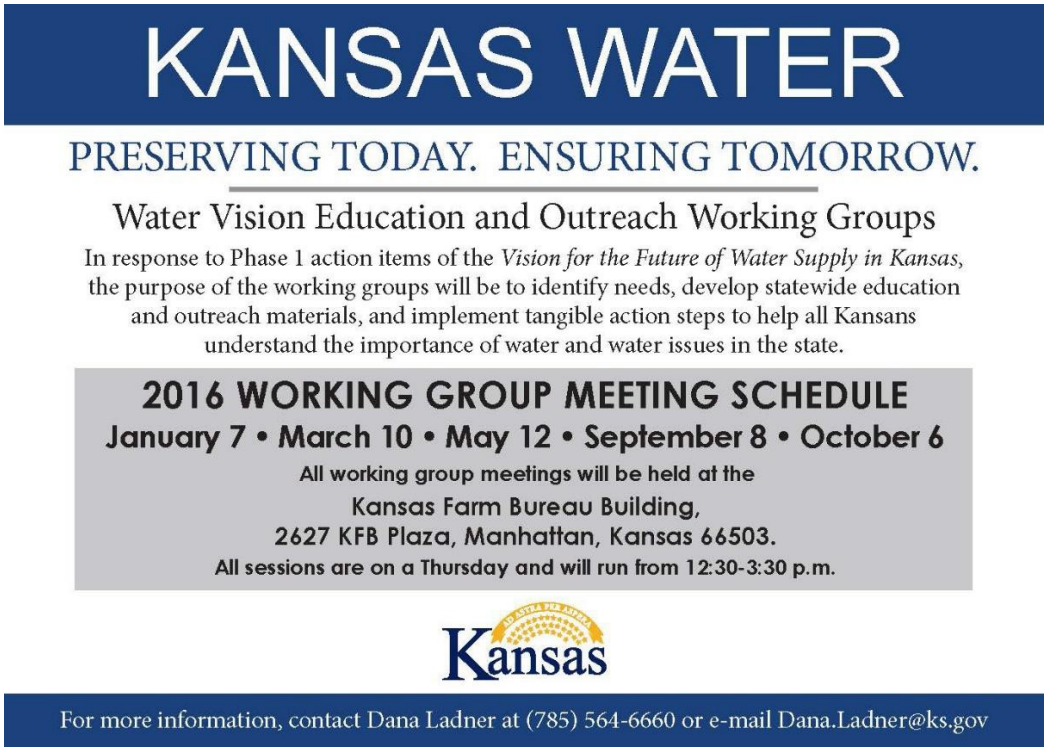
Many Phase I Action Items in the *Vision for the Future of Water Supply in Kansas* relate to education and outreach — critical aspects to creating a long-term commitment to the future of our state's water resources. Education action items range from K-12 and outside the classroom youth activities to university research and technical programs to prepare the future workforce in water resource career fields. The action items also call for enhanced educational programming for policy makers, community leaders and broadly to all Kansas citizens.

To develop strategies and receive additional stakeholder input on the education and outreach action items, an interagency and inter-organizational coordinating team was formed in the fall of 2015.

Throughout 2016 the coordinating team hosted a series of outreach meetings to solicit input into the development of statewide education and public outreach materials, and to develop tangible action plans aimed at strengthening Kansans' knowledge and awareness of water and water-related issues. The following multipart educational strategic framework for target audiences of youth, municipalities, K-12, business entities, community leaders, media and the general public was developed to evaluate the education, communication and outreach action items from the Vision.



VISION EDUCATION-RELATED ACTION ITEMS

This document is designed to be a supplement to the statewide *Vision for the Future of Water Supply in Kansas* and provides a strategic framework for addressing the following education-related action items contained in the Vision.

1. Appoint a task force to develop a multi-phased educational proposal for target audiences of K-12, community leaders and media to promote local conservation decisions. Existing educational efforts, programs and activities should be incorporated as appropriate. Ideas to be considered by the task force include:

    - *Implement community facilitation programs, with partners like K-State Research and Extension (KSRE), to develop ownership for local conservation districts.*
    - *Design and implement a statewide curriculum for K-12 on water conservation, building on current resources and knowledge such as Project WET and integrate water conservation into science curriculum, by working with partners such as the Kansas Association of Conservation and Environmental Education (KACEE) and the Kansas Department of Education.*
    - *Develop additional activities within youth and adult organizations such as 4-H and the K-State Research and Extension (KSRE) system to educate others and promote youth activities related to water conservation.*

2. Create a long-term commitment to water conservation education by designating responsibility for water conservation public information and outreach within agencies of the Water Resources Sub-Cabinet.

    - *Develop continual media plans and message maps related to water conservation and the importance of local engagement to be implemented by multiple partners through all aspects of traditional paid, earned and social media.*

3. Enhance educational programming specifically for state legislators as well as other state officials, the Congressional delegation and local policy makers.

4. Utilize agricultural education and 4-H to encourage young people to develop agricultural programs using water efficient technologies and less water intensive crops or crop varieties through recognition and incentive programs.

5. Develop models for the inclusion of water conservation into the agricultural education curriculum, including classroom, supervised agricultural experience and FFA activities.

6. Encourage the development of community college, technical programs and university programs to prepare the future workforce to work in irrigation efficiency technologies and with necessary expertise in less water intensive crops and crop varieties.

GUIDING PRINCIPLES

Following are guiding principles which directed the development of this supplement. These guiding principles will continue to serve as precepts for the implementation of the action items.

1. Nothing in this supplement is intended to displace current water education programs. Instead, the initiatives are designed to promote such programs and to encourage the development of complementary programs.

2. The initiatives and concepts described in this supplement are strategic in nature and, as such, do not describe the details of the implementation of the initiatives. The initiative implementation plans will be developed following the approval of the initiatives. Any local, regional or state agency, educational institution, non-government organization, private company or individual stakeholders interested in water education programs are invited and encouraged to provide input and feedback regarding the implementation plans and to participate in these initiatives.

3. All of the initiatives will be unified through a social marketing campaign and a central web-based platform.

4. All strategies and action items within this supplement exist under the larger umbrella of the Vision, and will support its mission to provide Kansans with the framework, policy and tools to manage, secure and protect a reliable, long-term statewide water supply. A reliable water supply is dependent upon both sufficient quantity and quality.

BUILDING ON SUCCESS

As described in the guiding principles, this supplement is not intended to displace any of the current water education programs. This strategic plan represents an opportunity to build upon and maximize the many successful education organizations and activities currently in place in Kansas. Just a few of these successes include the youth conservation poster and essay contests hosted through the County Conservation Districts, local community water festivals, the KACEE's Project WET, and the Awesome Aqua magazine and natural resource educator's guides developed through Kansas Foundation for Agriculture in the Classroom.

While we have many successes to celebrate related to water resource education in Kansas, gaps still exist and opportunities remain to strengthen Kansans' knowledge and awareness of water and water- related issues. Filling these gaps will require cooperation and collaboration between many entities and agencies, and will begin with an open commitment by all partners to seek mutual support and improvement. Success in the end will require everyone on all levels working together with a common goal of conserving and protecting our water resources for the next generation.

THEMES AND STRATEGIES

This section includes the themes and strategies identified during the education supplement development process.

During each working group meeting attendees focused discussion on the following themes:

- Community Facilitation and Learning
- K-12 Curriculum and Career Education
- Out-of-Classroom Youth Education
- Media and Public Outreach Campaigns
- Career Development

STRATEGY OVERVIEW

- Develop and enhance a statewide marketing campaign to include brand recognition within our state's residential households.
- Establish a brand recognizable centralized website.
- Increase awareness and knowledge of Kansas youth on water-related issues through K-12 education and beyond-the-classroom opportunities.
- Provide opportunities for Kansans of all ages to increase their awareness of local water issues.
- Develop partnerships between industry, community, and educational institutions that will promote and train for water-related careers.

Similar to the overall *Vision for the Future of Water Supply in Kansas,* strategies are identified and categorized in Phases according to the priority for implementation.

- Phase I action items are the highest priority and will be initiated, but not necessarily completed, during the first year of this draft of the Vision supplement.
- Phase II action items will be initiated within five years.
- Phase III action items are longer-term and may require additional research, development and stakeholder coordination before the action item can be initiated.

COORDINATING TEAM SUBGROUP CHAIRS

Dana Ladner, Kansas Dept. of Agriculture
Chair, Coordinating Team

Ginger Harper, Kansas Water Office
Community Facilitation & Learning Subgroup

Gregg Hadley, K-State Research & Extension
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Media & Public Outreach Campaigns Subgroup

Katie Patterson-Ingels, Kansas Water Office
Media & Public Outreach Campaigns Subgroup

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Career Development Subgroup

DEVELOP AND ENHANCE A STATEWIDE MARKETING CAMPAIGN TO INCLUDE BRAND RECOGNITION WITHIN OUR STATE'S RESIDENTIAL HOUSEHOLDS

STATEWIDE ACTION ITEMS

PHASE I

Assess Kansans' knowledge and awareness of water resources through a statewide assessment. Improve Kansans', as well as federal, state and other public officials, knowledge and awareness of water resources through a unified statewide message.

1. Work with the marketing firm under current state contract, assuming capabilities match the needs of the campaign.
2. Develop and conduct statewide awareness assessment through the marketing firm to establish baseline knowledge of Kansans' understanding and comprehension of water issues.
3. Analyze and share findings.

PHASE II

Utilizing the marketing firm, develop a media plan and campaign message maps to improve knowledge and awareness of water resources and promote local citizen knowledge and engagement in water conservation.

1. Create a unified and recognizable brand for the media plan.
2. Develop a portfolio of water resource education messages.
3. Debut campaign through a concerted outreach launch event including social media, print coverage and television broadcasting.
4. Make modifications and improvements to media plan and message maps as necessary.
5. Conduct a mid-campaign survey to assess effectiveness of media plan, comparing results with initial findings of baseline survey.
6. Assess the success of the campaign through a post-campaign survey and adapt accordingly annually.
7. Continue to develop and incorporate digital strategies for end user interaction as identified by the marketing firm.

ESTABLISH A BRAND RECOGNIZABLE CENTRALIZED WEBSITE

STATEWIDE ACTION ITEMS

PHASE I

Create an online "one-stop shop" of statewide water-related resources and information for all Kansans including federal, state and other public officials.

1. Work with a marketing firm, under current state contract, to develop the website resource.
2. Hire, or designate internally, a website administrator responsible for working with the firm on the website design, development and content management.
3. Collect and incorporate general information about the state's water resources in the one stop shop site.
4. Collect current and relevant materials through contributions by water agencies and designated subgroups.
5. Initiate development and promotion of the centralized website.
6. Create a clearinghouse for resource libraries on the website. Information to be included, but not limited to the following: curriculum resources, vetted resources for K-12 for utilization in classrooms, scientific research based resources, economic indicator models, and water-related workshop resources as well as a list of experts and researchers who can provide information on water-related issues.

PHASE II

Launch and continue adding to centralized website, utilizing materials and resources collected in Phase I, and promote website throughout the state.

1. Enhance centralized website by adding interactive user engagement opportunities such as online information requests and downloadable curriculum.
2. Maintain and add to resource library, keeping materials current and relevant.
3. Continue to assess the usefulness of the "one-stop shop" website.

INCREASE AWARENESS AND KNOWLEDGE OF KANSAS YOUTH ON WATER-RELATED ISSUES

STATEWIDE ACTION ITEMS

PHASE I

1. Establish baseline knowledge of youth in Kansas on water-related issues through a review of marketing research data on youth education.
2. Create opportunities to encourage collaboration between organizations currently involved in water education for youth:
    a. Hold Governor's roundtable including the Kansas Commissioner of Education, the President and CEO of the Kansas Board of Regents, and leadership from organizations involved in water-related education for youth and which establishes a commitment for integrating efforts in water education.
    b. Hold a statewide Summit on Water Education for educators and educational organizations to share best practices, resources, curriculum and services.
    c. Develop a collaborative plan for sharing water educational resources on an ongoing basis, to include organizing them on the website and sharing them through professional development programs.
3. Develop a grant program for new and existing water education organizations to provide professional development, curriculum and resources which build on statewide messaging efforts.
4. Collaborate with youth-related organization leadership on water-related educational opportunities and establish sessions and experiences focused on water.

PHASE II

1. Launch and promote statewide grant program and award grants for water education.
2. Provide information to K-12 educators about available resources that correlate with educational standards.
3. Provide information to beyond the classroom education organizations on water education curriculum, tools and resources.
4. Provide recognition and awards to youth on water-related projects, offered through schools, clubs and organizations.
5. Increase opportunities for professional development for educators on water-related curriculum to strategically emphasize information and education regarding the importance of water and water conservation practices. Some opportunities may be made possible through the grant program established in Phase I.
6. Conduct surveys to assess changes in youth awareness and knowledge in water-related conditions and issues.

PHASE III

1. Continue grant program from Phases I and II.
2. Continue to assess changes in youth awareness and knowledge in water-related conditions and issues.

PROVIDE OPPORTUNITIES FOR KANSANS OF ALL AGES TO INCREASE THEIR AWARENESS OF LOCAL WATER ISSUES

STATEWIDE ACTION ITEMS

PHASE I

1. Establish and hire Community Outreach Specialist position(s). The ideal candidate(s) will possess a water conservation background coupled with strong community discussion, education and facilitation skills.
2. Expand current collaboration efforts between university water researchers and water agencies to include higher education institutions in Kansas. Discussions would include state and regional water priorities, current and potential water research projects, and additional opportunities to collaborate.
3. Work with developers of centralized website to create links to existing economic indicator resources. Site should provide continual evaluation of the economic impacts of reduced water use based on decision support resources.
4. Establish the "Top 3" water conservation measures for each Regional Planning Area for household, agriculture and industrial/municipal water use. These should be developed by the Regional Advisory Committees using existing data and displayed on the central website.

PHASE II

1. Utilize the statewide media plan and message maps to promote local engagement in water resource management.
2. Enhance working relationships between local and state entities for collaboration on water strategies. This should consist of a unified message disseminated throughout the state by local entities.
3. Coordinate workshops for local decision makers on water initiatives held throughout the state.
4. Develop a grant program to support Regional Advisory Committees and other organizations that are working with communities to raise awareness about water issues, recognize successes and engage citizens in water conservation initiatives.
5. Establish region-specific, targeted improvements for household, agricultural and industrial/municipal water conservation. These measures will be shared through the Community Outreach Specialist(s) and workshops and educational events.

DEVELOP PARTNERSHIPS BETWEEN INDUSTRY, COMMUNITY AND EDUCATION INSTITUTIONS THAT WILL PROMOTE AND TRAIN FOR WATER-RELATED CAREERS

STATEWIDE ACTION ITEMS

PHASE I

1. Begin evaluation of higher education institutions current academic offerings and identify water-related courses and curricula.
2. Coordinate regional/topical workshops to facilitate development of partnerships between higher education and business and industry. Partnerships will analyze existing academic degree programs leading to water-related careers.
3. Develop workshops and professional developments based on information found in KDA Agriculture Workforce Needs Assessment and state meetings.
4. Develop a grant-sponsored internship/mentorship program in water-related careers, sponsored across water agencies.

PHASE II

1. Host professional development opportunities to prepare individuals in multiple related career paths to understand water resources.
2. Seek opportunities to promote existing water-related degree programs at Regents institutions, based on evaluations of all academic offerings, apply for United States Department of Agriculture, National Institute of Food and Agriculture funding through programs such as Higher Education Challenge Grants and Secondary Education, Two-Year Postsecondary Education, and Agriculture in the K-12 Classroom (SPECA) Challenge Grants.
3. Collaborate with higher education institutions to fill any gaps in the water-related academic career tracks that were identified during Phase I.
4. Initiate and evaluate internship/mentorship grant program.

PHASE III

1. Evaluate and increase enrollment and business participation in the internship/mentorship program.
2. Complete and evaluate U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) funded grant projects.

CIMARRON REGIONAL ADVISORY COMMITTEE ACTION PLANS

CIMARRON PRIORITY GOAL #1

REDUCE THE RATE OF DECLINE OF THE OGALLALA AQUIFER IN THE REGION THROUGH VOLUNTARY, INCENTIVE-BASED CONSERVATION AS ASSESSED EVERY FIVE YEARS

CIMARRON PRIORITY GOAL #2

EXTEND THE USABLE LIFETIME OF THE OGALLALA AQUIFER IN THE REGION THROUGH TECHNOLOGY ADOPTION (IRRIGATION, INDUSTRIAL, MUNICIPAL, ETC.), NEW CROP VARIETIES AND CONSERVATION FOR ALL USES AND FOR MANY GENERATIONS

Goals 1 and 2 seek to reduce water use in the region therefore the following actions apply to both

ACTION STEPS

- Define and quantify the regional aquifer decline, establishing a baseline for comparison
- Work with partners, including KDA and NRCS, to develop baseline of water saving technologies in use and voluntary incentive based conservation occurring and a method to track participation. Consider using the annual water reporting system, producer surveys and other means to identify water saving efforts if needed.
- Secure funding, including statutory SGF transfer to SWPF, to support water conservation programs and evaluation of technologies, crop varieties and water management to save water.
- Provide water users with information on available tools and programs, including but not limited to; LEMAS, WCAs, Multi-Year Flex Accounts, Water Banks, Irrigation Scheduling, RCPP-Soil Probe program through GMDs, K-State Extension tools, K-State Research/farms and additional tools and programs as made available.
- Change producer perception from a “use it or lose it” mentality.
- Use demonstration projects to educate producers to economically reduce water used. (Water technology farms, LEMAS, WCAs, K-State Research and Extension farm projects and other water management and water efficiency projects can provide valuable examples and information to producers to encourage their participation in water saving efforts.)
- GMD3 and DWR work with producers to establish LEMAs and WCAs.
- Build a network of agencies, organizations, researchers, industry and producers to disseminate credible, accurate information on water use, conservation and technology, programs and tools to reduce water use.
    - Utilize K-State and others to develop technologies and crop varieties to enhance water savings methodologies and deliver information.

- Work with producer and farm groups to reach other producers.
- Include municipal and industrial users in outreach.

- Evaluate the effectiveness of technologies and crop varieties to develop voluntary incentives and tools to economically reduce water usage.
  - Support water technology farms (WTF) in the region for evaluation of technologies and management methods to reduce the current level of water use with a goal of at least one WTF in a water stressed area and one in a non-stressed area.
  - Develop mobile drip irrigation (MDI) statistics so funds could become available for technology upgrades through state and federal programs.
  - Work with federal partners to make additional water saving technologies eligible for federal programs.
  - Disseminate scientific and economic information on technology efficiencies and crop varieties as well as other relevant information from pilot studies, research and water technology farms.
- Use positive press releases to spread the word as WCAs are developed.
- Public water suppliers and industrial users should consider alternative uses of non-potable water and existing water supplies before developing any new water supplies.
- Public water suppliers should consider water rate structures to promote water conservation.

CIMARRON PRIORITY GOAL #3

IF INDIVIDUALS ELECT TO CONSERVE THEN THEY WOULD BE AFFORDED FLEXIBILITY (E.G. - ALLOWING QUANTITIES TO BE MOVED, WATER BANK MOVEMENT, WATER CONSERVATION AREAS, ETC.) INDIVIDUALS MAY CHOOSE TO REMAIN WITH CURRENT WATER USE BUT NOT BE AFFORDED THE FLEXIBILITIES.

ACTION STEPS

- Increase adoption of water conservation through education by those who are currently using the technology.
- Identify existing conservation success stories and share with area producers, industry or municipalities as applicable.
- Initiate demonstration projects with willing producers in the region (technologies, crop varieties and management techniques) to reduce water use.

CIMARRON PRIORITY GOAL #4

AS MEASURED THROUGH INCREASE IN ADOPTION BY 50% AS ASSESSED EACH FIVE YEARS, PROMOTE THE ADOPTION OF IRRIGATION EFFICIENT TECHNOLOGY AND INVEST IN UNIVERSITY RESEARCH TO EVALUATE THE EFFECTIVENESS OF SUCH TECHNOLOGY AND CROP VARIETIES TO DEVELOP VOLUNTARY INCENTIVES AND TOOLS TO ECONOMICALLY REDUCE WATER USAGE. RECOMMENDED STRATEGY TO ACHIEVE GOAL - INCREASE ADOPTION THROUGH EDUCATION BY THOSE WHO ARE CURRENTLY USING THE TECHNOLOGY.

ACTION STEPS

- Educate water users on new technologies through local papers, extension, meetings of producer groups, irrigation organizations, conservation districts, GMD3 and other means.
- Develop and disseminate results from the use of water saving tools by those who have adopted technology and management tools to economically reduce water usage.
- Use local demonstrations of technology/demo farms in region to share techniques.
- Provide Water Conservation Area (WCA) information, including dissemination with water use reports.
- Develop widespread awareness of EQIP, CRP, RCPP, CIG and other program availability and increase participation.
- Encourage improvement of municipal conservation plans, municipal rate structures and other means to encourage water use reductions.

EQUUS-WALNUT REGIONAL ADVISORY COMMITTEE ACTION PLANS

EQUUS-WALNUT PRIORITY GOAL #1

ACHIEVE AND MAINTAIN SUSTAINABLE BALANCE OF GROUNDWATER WITHDRAWALS WITH ANNUAL RECHARGE IN THE EQUUS BEDS AQUIFER BY 2020. ENSURE SAFE YIELD AND RECHARGE RATE CALCULATIONS IN THE EQUUS BEDS AQUIFER ARE ACCURATE THROUGH A DISTRICT WIDE INTEGRATED GROUNDWATER AND SURFACE WATER MODEL BY 2018.

Initial efforts will be focused on developing a refined understanding of the current balance of groundwater appropriations and sustainable yield. Subsequent efforts will focus future management strategies on achieving a long term balance between withdrawals and recharge.

ACTION STEPS

- Complete ongoing KGS modeling effort currently scheduled for completion during 2016.
- Utilize the model results to support refinement of aquifer recharge rates.
- Consider application of the revised recharge rates to support safe yield calculations within modeled boundaries.
- Complete expansion of existing USGS Equus Beds MODFLOW Model to cover all of GMD2.

- Continue to encourage communication and collaboration between all responsible agencies and organizations tasked to implement this action.

- Utilize modeling results to inventory areas of over-appropriation or within the Equus Beds Aquifer.

- Consider implementation of management strategies for over-appropriated areas identified by model within the Equus-Walnut Region.

AGENCIES/ORGANIZATIONS

- GMD2, DWR, KWO, KGS, Equus Beds Stakeholders and Stakeholder Organizations.

RESOURCES NEEDED

- Continuation of joint funding agreement between GMD2 and KWO.

TIMEFRAME:

- The timeframe for completion of the actions required to support this goal are outlined in the attached document. The actions are generally anticipated to be completed by the end of 2018

GEOGRAPHIC SCOPE:

- The action items identified generally cover the majority of the Equus Beds Aquifer. The modeling activities will help define the most vulnerable areas within the aquifer and facilitate prioritization of areas for safe yield adjustments.

REGULATION/POLICY CHANGES:

- Consider adjustment of GMD2 and DWR safe yield calculation criteria to reduce potential future over appropriation. Develop resource management strategies focused on achieving a long term balance between withdrawals and recharge.

EQUUS-WALNUT PRIORITY GOAL #2

EACH PUBLIC WATER SUPPLIER IN THE REGION WILL DEVELOP A LONG TERM WATER SUPPLY PLAN AND REVISE EVERY FIVE YEARS TO MEET THEIR INDIVIDUAL FORECASTED NEEDS. WATER SUPPLIERS SHOULD CONSIDER ALTERNATIVE USES OF NON-POTABLE WATER AND EXISTING WATER SUPPLIES BEFORE DEVELOPING ANY NEW WATER SUPPLY PROJECTS.

ACTION STEPS

- The Kansas Water Office (KWO) will coordinate with the Kansas Department of Health & Environment (KDHE) -Bureau of Water and Kansas Department of Agriculture - Division of Water Resources (DWR) on a database of all public water suppliers within the Equus-Walnut Regional Advisory Committee (RAC) that includes contact information and chief responsible staff person and chief governance person for each supplier by December 31, 2016.

    - *Database will be updated every 1-3 years*

- The KWO will develop a survey document to ascertain the current state, practice, and plans of each public water supplier as to their long term water supply plan, including their consideration of non-potable water and existing water supplies by March 31, 2017. The results of this survey document will be made available to each public water supplier within the Equus-Walnut Planning Region.

- The KWO will communicate the planning survey to each public water supplier by June 30, 2017.

- The RAC will work with the KWO to prepare a report to the Kansas Water Authority (KWA) that conveys the results of the survey and identifies any further actions that may be necessary in pursuit of the goal.

- KWA will establish a 5-year frequency for submitting updated water plans by year end 2017

- Promote a regulatory framework for the use of graywater both on-site and off-site.

- Recommendations for the use of surface water and groundwater by water suppliers will be reviewed by the KWA to prioritize, depending upon local conditions, the use of excess surface water before ground water by 2018. Incentives should be in alignment with water resource conservation philosophy.

- The Equus-Walnut RAC, in conjunction with the KWA, will develop an over-arching water resource conservation strategy that prioritizes how water resources will be allocated.

AGENCIES/ORGANIZATIONS

- KWO, Equus-Walnut RAC, KWA, DWR, KDHE (source of data on public water suppliers within the RAC and coordination with existing water planning required/expected of public water suppliers)

RESOURCES NEEDED

- Initially, KWO staff time to perform the action steps above. The process could lead to additional actions that might require additional resources. A potential example could be an outreach effort to train and support public water suppliers in the development of long term water supply plans.

TIMEFRAME OF COMPLETION

- Complete the initial survey and report within two years. If follow up actions is indicated the scope of that work will dictate the additional time required to complete.

GEOGRAPHIC SCOPE

- The geographic scope will be determined by the location of the source of supply of all public water suppliers located within the Equus-Walnut RAC planning area.

REGULATION/POLICY CHANGES

- If it is found that some of the public water suppliers are not engaging in long term water supply planning, the potential role of existing and new regulations and policy changes that might result in the planning being universally accomplished would need to be evaluated by the Equus-Walnut RAC, the other RACs, the KWA, the KWO, and the KDHE at a minimum.

EQUUS-WALNUT PRIORITY GOAL #3

IMPLEMENT AND MAINTAIN WATERSHED PROTECTION ACTIVITIES TO MAINTAIN REGIONAL RESERVOIR STORAGE CAPACITY FOR AN ADDITIONAL 100 YEARS BEYOND THE DESIGN LIFE.

EQUUS-WALNUT PRIORITY GOAL #4

MAINTAIN OR REDUCE THE RATE OF SEDIMENTATION AND NUTRIENT LOADING THROUGH THE ENCOURAGEMENT OF BEST MANAGEMENT PRACTICES (BMPS) ON 50% OF THE HIGH PRIORITY ACRES IN THE WATERSHED ABOVE WATER SUPPLY RESERVOIRS. ENSURE PRACTICES ARE SUSTAINED AND MAINTAINED FOR THE LONG-TERM AND PRIORITIES ARE REASSESSED EVERY FIVE YEARS.

ACTION STEPS

- Identify market based funding sources.
- Increase Information & Education activities which keep in mind human nature.
- Re-establish a Kansas buffer initiative program.
- Property owners should be compensated for use of their property for implementation of BMPs through existing or enhanced conservation programs. Discourage shot gun approach to BMP implementation.
- Maintenance payments for upkeep of conservation practices beyond their contract life.
- Conservation Farms demonstrating practices which reduce sediment runoff.
- Let Corps of Engineers (COE) Water Storage Contract Holders use Operations & Maintenance (O&M) money for watershed practices to help reduce sedimentation.
- Add additional fees to water bills to be used for BMP implementation in watersheds.
- Increase partnership between Natural Resource Conservation Service (NRCS), Kansas Department of Health and Environment (KDHE), Kansas Department of Agriculture - Division of Conservation & K-State Research & Extension (KSRE) to improve efficiency of BMP implementation.
- Determine/define high priority areas.
    - Establish a “Streambank Stabilization Initiative” for priority areas.
- Continue to focus on BMPs as highlighted within Watershed Restoration and Protection Strategies (WRAPS) 9 Element Watershed Plans as well as streambank stabilization and erosion control dams.
- Ensure revisions to WRAPS 9-Element Watershed Plans covering areas above regional water supply reservoirs to implement best management practices which lead to regional reservoir storage capacity for an additional 100 years beyond the design life.
- Conduct sediment source analysis within watersheds above regional water supply reservoirs. Results of this analysis can lead to modifications of BMP implementation types (i.e. streambank stabilization or cropland/upland areas of focus).

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- Kansas Water Office (KWO), Kansas Department of Agriculture (KDA), KDHE/WRAPS, NRCS, Farm Service Agency (FSA),U.S. Environmental Protection Agency (EPA), county Conservation Districts, Kansas Rural Center, Kansas Alliance of Wetlands and Streams (KAWS), KSRE, Kansas Farm Bureau, Kansas Livestock Association, State Association of Kansas Watersheds, local stakeholders.

RESOURCES NEEDED

- NRCS, local Conservation Districts, and WRAPS for technical assistance with staffing based on specific priorities (i.e. Buffer specialist).

- BMP funding through Conservation Reserve Program (CRP), State Water Plan, WRAPS/EPA 319.

    - Establish baseline funding from previous 15 years for available dollars for water quality practices and estimates costs for determined priority areas.

- Additional funding should not come at the expense of reducing funding for non-priority areas.

TIMEFRAME OF COMPLETION

- One year of education and training to get staffing in place.

- Years 2 through 5 BMPs are implemented on the ground.

GEOGRAPHIC SCOPE

- Watersheds above any public water supply reservoir within the Equus-Walnut Region.

REGULATION/POLICY CHANGES

- Relax haying restriction on CRP-contracted land with payment adjustments.

- Provide more flexibility at the county level to determine specs for cost-shared practices.

- Discussions with COE regarding use of O&M funds for watershed protection and restoration activities.

- Provide up to 100% cost share for BMP implementation:

    - Lifetime contracts with maintenance payments to landowners.
    - Potentially set cropping boundaries/set-backs along streams.

EQUUS-WALNUT PRIORITY GOAL #5

ALLOCATE NECESSARY RESOURCES ($1-5 MILLION) WITHIN FIVE YEARS TO IDENTIFY AND PRIORITIZE CURRENT CONTAMINATION ISSUES IMPACTING THE EQUUS BEDS AQUIFER AND DEVELOP A PLAN TO MANAGE AND MITIGATE THE CONTAMINATION. REVIEW EXISTING STUDIES AND EMERGING TECHNOLOGIES TO DEVELOP A NEW CONCEPTUAL PLAN WITH ESTIMATED COSTS. BEGIN IMPLEMENTATION OF THE PLAN WITHIN 10 YEARS OF COMPLETING THE STUDY.

ACTION STEPS

- Develop an inventory of known contamination sites within the Equus Beds Aquifer.
    - GMD2 to lead effort, anticipated completion by 12/2017
- Concurrent with development of contamination site inventory, identify data gaps associated with inventoried sites, this could include lack of definition regarding vertical or horizontal extent of contamination, concentration of contaminants or the source of contamination of an identified site.
    - GMD2 to lead effort alongside collaboration with KCC and KDHE.
- Prioritize sites for additional investigation utilizing development of prioritization criteria.
- Utilize and refine existing groundwater models to address site specific data needs associated with the performance of additional investigations.
- Install additional monitoring wells and piezometers as necessary to collect data where needs are identified.
- Complete a remediation feasibility study for the top three prioritized sites.
- Complete pilot studies as required to facilitate groundwater remediation feasibility.
- Develop a process to address the contaminated sites within the Equus-Walnut Region.

AGENCIES/ORGANIZATIONS

- GMD2 will lead the effort in collaboration with Equus Beds Stakeholders and Stakeholder Organizations, KDHE, KCC, KWO, KGS and DWR.

RESOURCES NEEDED

- Successful implementation of this goal will require significant financial resources. It is estimated that completion of action steps I-III will require funding of approximately $100,000 over the next two years. Funding levels associated with the remaining action items will be developed during the inventory and prioritization process. For planning purposes the total estimated funding requirements for the prioritized sites is in the 1-5 million dollar range.

TIMEFRAME

- Achieve the initiation of active remediation within 5-10 years.

GEOGRAPHIC SCOPE

- The prioritization process will identify the sites offering the greatest return or cost benefit results. Stakeholder engagement will be utilized in the prioritization process.

REGULATION/POLICY CHANGES

- The need for regulatory or policy change will be identified throughout the process and additional action items developed to initiate any changes required.

EQUUS-WALNUT PRIORITY GOAL #6

WHILE FOCUSED ON THE PRESERVATION OF OUR WATER RESOURCES AGRICULTURAL WATER USERS WILL DOUBLE THE VALUE OF IRRIGATION-BASED PRODUCTION OVER THE NEXT 50 YEARS. COORDINATE WITH PUBLIC/PRIVATE RESEARCH AND DEVELOPMENT PROGRAMS TO DEVELOP AND PROMOTE LESS WATER AND NUTRIENT INTENSIVE CROPS. PROVIDE INCENTIVES FOR OPERATORS TO IMPLEMENT IRRIGATION EFFICIENCY IMPROVEMENTS IMMEDIATELY. INCREASE EFFORTS TO IMPLEMENT WATER CONSERVING AGRICULTURAL PRODUCTION PRACTICES UTILIZING NO-TILL METHODS, COVER CROPPING SYSTEMS AND A RANGELAND CEDAR TREE MANAGEMENT PROGRAM.

ACTION STEPS

- Preserve water resources and coordinate programs to develop less water-intensive crops.
    - Develop 4 water demonstration farms which compare multiple less water intensive crops.
- Coordinate public/private research and development for development of viable drought tolerant crops.
    - Invest in Center for Sorghum Improvement.
- Identification and development of markets for alternative crops.
- Establish a technology farm within the Equus-Walnut Region where no-till, cover cropping systems and a rangeland management program can be evaluated. Rely on expertise of state and local experts to identify an appropriate location for technology farm within the Equus-Walnut Region.
- Provide and support workshops and field days starting in February/March 2017 in advance of annual burn season for fire management of invasive vegetation for improved rangeland management.
    - Outcome of these efforts and previously mentioned technology farm would be improved soil health, improved moisture holding capacity of soils, and increased groundwater recharge potential through increased education and awareness area residence

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- State of Kansas, Kansas Department of Agriculture, Kansas Water Office, Kansas State University, Grain Associations, willing farmers, Kansas Livestock Association, Kansas Farm Bureau, Kansas Grazing Land Coalition

RESOURCES NEEDED

- $80,000 for equipment and consultant salary for water demonstration farms.
- $400,000 for investment in Center for Sorghum Improvement.
- Funding for Land Grant College Research.
- Payments to farmers for research plots.

TIMEFRAME OF COMPLETION

- Complete within 2 years.

GEOGRAPHIC SCOPE

- Sedgwick and Harvey Co for water demonstration farm development.
- Statewide area of impact for Center for Sorghum Improvement.

REGULATION/POLICY CHANGES

- GMO approvals

EQUUS-WALNUT PRIORITY GOAL #7

ENCOURAGE MUNICIPAL, COMMERCIAL, AND INDUSTRIAL USERS OF WATER TO INCREASE THE EFFICIENCY OF NET WATER USE BY REDUCING THE VOLUME OF WATER USED PER UNIT OF MEASURE BY 5% PER DECADE. PROVIDE INCENTIVES FOR USERS TO IMPLEMENT WATER EFFICIENCY IMPROVEMENTS.

ACTION STEPS

- The RAC will discuss the regional vs. statewide nature of this goal. If this discussion supports pursuing the goal on an Equus-Walnut RAC basis that will dictate a significantly different approach to outreach than if it becomes statewide in scope. This process needs to be completed before any further development of an action plan for this goal. Place this question on the May Equus-Walnut RAC meeting agenda for discussion and possible message to the KWA.

- By Q1 2017, identify a comprehensive list of major water users in each of the three categories (municipal, commercial, and industrial) for the RAC. Will need to decide on how small to go on commercial users.

- Communicate with all of the targeted entities in each category to determine if they would be willing to attend a “brainstorming session” on the goal and how it might be effectively and efficiently implemented. Consider as a special session during the annual Governor’s Water Conference in November 2017.

- Have entities that have recently implemented water efficiency projects to present their success to the attendees of the “brainstorming session”.

- Analyze the results from Step 2 to determine a plan forward.

- Integrate action items of Goal 7 with Goal 2

- Consider incentives that have been successful in other parts of the country that encourage water efficiency projects.

- By the end of 2017, ask major water users to include a 5% improvement in water use efficiency per decade in their annual goals.

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- KWO; Equus-Walnut RAC; Kansas Water Authority; KDHE source of data on public water suppliers within the RAC and coordination with existing water planning required/expected of public water suppliers.

RESOURCES NEEDED

- Initially, KWO staff time to perform the action steps above. The process could lead to additional actions that might require additional resources.

TIMEFRAME OF COMPLETION

- Complete within 5 years.

GEOGRAPHIC SCOPE

- Equus-Walnut RAC

REGULATION/POLICY CHANGES

- N/A

GREAT BEND PRAIRIE REGIONAL ADVISORY COMMITTEE ACTION PLANS

GREAT BEND PRAIRIE PRIORITY GOAL #1

ACHIEVE WATER USE SUSTAINABILITY WITHIN THE GREAT BEND PRAIRIE REGIONAL PLANNING AREA BY 2025 WITH A STARTING POINT BEING NO NEW NET DEPLETIONS THAT INCLUDES A REASONABLE RAISING OR LOWERING OF THE WATER TABLE BASED ON AVERAGE WEATHER CONDITIONS.

BACKGROUND

- There are several challenges this region has to face when designing an Action plan to address long-term water use sustainability. Big Bend Groundwater Management District #5 overlaps approximately 2/3 of the RAC planning area. GMD#5 has developed, in coordination with state and federal agencies, a high-resolution hydrologic model ("BBGMDMOD"). The BBGMDMOD is designed with seven layers, each representing a geologic formation below the ground surface. This allows for the analysis of water movement between these layers. This is important for analysis of groundwater quality, which is a significant concern of GMD#5 and RAC. However, due to the complexity of BBGMDMOD, KDA–DWR has, in coordination with S.S. Papadopoulos and Associates, simplified BBGMDMOD by collapsing the seven layers into a single layer model (KDAMOD). While this simplification does lose the ability to analyze vertical water movement between layers, it maintains the ability to track water movement throughout the entire model area. The KDAMOD will be utilized to assist with identifying management units within the RAC. Further refinement of the units with BBGMDMOD is recommended prior to evaluating any water use reductions through this Action Plan. This region is generally data-rich in most areas. Further data from various stakeholder groups will add to the final plan.

- The RAC has reviewed several maps and datasets regarding the current conditions of the aquifer and actions that result in the current state of the aquifer. The RAC has evaluated the appropriate methods for assessing current aquifer status and strategies for achieving future sustainability. Discussion

revolves around the currently authorized quantities for the water rights vs the historical water use of the area. The long-term plan must review both measures to better understand the operations of the region's water users. In order to prioritize the areas in need, the historical use within the region will be compared against the rate of aquifer recharge. This approach provides hydrologic accounting of the aquifer. It also identifies areas that are over drafting the aquifer. Any solution needs to address this issue head-on.

- The RAC thinks future remedies should utilize and incentivize voluntary programs to soften the economic impact of potential water reductions. Voluntary programs require time, financial resources, and education before actual water use reductions will occur. There are several programs available to water users in the RAC, offered by various organizations and agencies. The regional goal "water use sustainability by 2025", in terms of groundwater response, this is a very short timeframe. Thus, the RAC recommends utilizing voluntary, incentivized programs through 2022.

- When evaluating long-term action plans, participation in voluntary conservation programs must be taken into account. The RAC recognizes the importance of priority in Kansas Water Law. The design and nature of management strategies will require more meetings with stakeholders to finalize the plan. Future management strategies will be based on the certified water right quantities not water use history. With the legislative amendment to K.S.A. 82a-718, the premise of using historic water use as a basis for administration has issues. This method, in effect, rewards water users that maximized historic usage and penalizes more conservative water users within the same area. Furthermore, utilizing certified water appropriations reinforces the value of existing water right property values.

ACTION STEPS

- Short-term Actions
    - Identify existing voluntary conservation programs and determine if new incentivized conservation programs are needed to compliment current programs.
    - Work with the appropriate agencies to insure that cost-shares are current and economically competitive.
    - Hold stakeholder meetings in conjunction with the appropriate agencies to inform the public about the various programs available.

- Long-term Actions
    - Utilize the KDAMOD to determine rate of withdrawal from the aquifer from all uses (irrigation, industrial, evapotranspiration, municipal, etc.) versus the rate of recharge to the aquifer from all sources (precipitation, streambank, infiltration, etc.) for the GBP RAC area.
    - Compile the model data into presentation materials for area stakeholder groups/agencies to identify appropriate management units for further analysis with BBGMDMOD. This data will analyze the rate of depletion spatially across the area to assist with prioritization of projects and funding.

- Coordinate with state agencies & GMD#5 to assess and implement appropriate management controls to bring areas of concern into balance.

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- Kansas Department of Agriculture – Division of Water Resources (KDA–DWR); Kansas Department of Agriculture – Division of Conservation (KDA-DOC); Kansas Department of Wildlife, Parks and Tourism; Kansas Water Office (KWO); Big Bend Groundwater Management District #5 (GMD#5); Local Watershed Districts; Kansas Geological Survey (KGS); Water PACK; Central Kansas Water Bank Association (CKWBA); Kansas Livestock Association (KLA); Kansas Farm Bureau (KFB); Kansas Forest Service; United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS); United States Department of Agriculture – Farm Service Agency (USDA-FSA); United States Department of Interior – US Fish and Wildlife Service (USFWS); Farm Credit; Local banks

RESOURCES NEEDED

- Model scenarios ($50,000 each)
- Annual model update and calibration ($10,000 annually)
- Incentive enhancement funds (amount TBD)

TIMEFRAME OF ACTION PLAN

- Identify existing programs and coordinate with agencies
- Model scenario completion (4-5 months)
- Stakeholder outreach meetings (ongoing)
- Coordination with agencies (ongoing
- Draft management strategies for review by public (December 2017)
- Stakeholder meetings (2 months)
- Finalize management strategies for RAC (April 2018)

GEOGRAPHIC SCOPE

- Great Bend Prairie aquifer extent of RAC

REGULATION/POLICY CHANGES

- None at this time

EXISTING PROGRAMS/MANAGEMENT TOOLS

- USDA-NRCS
  - CREP (Conservation Reserve Enhancement Program)
  - CSP (Conservation Stewardship Program)
  - EQIP (Environmental Quality Incentive Program)
  - RCPP (Regional Conservation Partnership Program)

- KDA-DWR
  - IGUCA (Intensive Groundwater Use Control Area)
  - WCA (Water Conservation Area)
  - MYFA (Multi-Year Flex Account)

- KDA-DOC
  - CREP (Conservation Reserve Enhancement Program)

- Big Bend Groundwater Management District #5
  - Groundwater Management Program
  - LEMA (Local Enhanced Management Program)
  - Water Right Purchase
  - RCPP (Regional Conservation Partnership Program)

- Central Kansas Water Bank Association
  - Deposit / Lease Program
  - Savings Account Program

GREAT BEND PRAIRIE PRIORITY GOAL #2

DEVELOPED FOR MUNICIPALITIES AND RURAL WATER DISTRICTS. - MAINTAIN ANNUAL TRAINING FUNDS OF 15% FROM CLEAN WATER DRINKING FEE AND INCREASE TECHNICAL TRAINING SUPPORT TO PUBLIC WATER SUPPLY (PWS) SYSTEMS TO ENHANCE NEW TECHNOLOGY AND INCREASE WATER EFFICIENTLY AND EFFECTIVELY, THUS REDUCING WATER LOSS. UTILIZE AVAILABLE MUNICIPAL/RESIDENTIAL/COMMERCIAL "**LAWN"** IRRIGATION TRAINING PROGRAMS PROVIDED BY THE IRRIGATION ASSOCIATION.

RESPONSIBLE AGENCIES/ORGANIZATIONS

- Cities/Rural Water Districts or Public Water Suppliers: The Clean Drinking Water Fee is paid by the city water departments, rural water districts and any other organization that is selling water at retail.

- Kansas Water Office (KWO): authorizing the Kansas water office, with approval of the Kansas water authority, to establish the clean drinking water fee by rules and regulations and imposing a cap on such fee

- Kansas Department of Health and Environment: Contracts out for Technical Assistance.

- Kansas Department of Agriculture – Division of Conservation: promulgate rules and regulations in coordination with the Kansas water office establishing the project application evaluation criteria for the use of such moneys under subsection (c)(2)(B) (Chapter KSA 82a: Waters and Watercourses; Article 21, Clean Drinking Water Fee)

- Kansas Department of Revenue (KDR): Collects and Distributes Clean Water Drinking Fee in accordance with state statues.

- Kansas Rural Water Association: provides technical assistance and funded as an expenditure of the Clean Drinking Water Fee.

RESOURCES NEEDED

- Continue to provide a minimum of 15% and increase more (up to 30%) of Clean Drinking Water Fee for technical assistance by the Kansas Rural Water Association for Public Water Suppliers.

- Contract for Services with Kansas Rural Water Association by KDHE.

- Obtain free training opportunities from the Irrigation Association for LAWN irrigators and landscapers.

TIMEFRAME

- Current – maintain existing statutes and policies.
- Implement Review of technical assistance through KDHE and water reports on annual water loss.
- KDHE implement technical assistance from the Irrigation Association by 2018.
- PWS attain goal of less than 20% water loss within region by 2025.
- PWS attain goal of less than 15% water loss within region by 2035.
- PWS attain goal of less than 10% water loss within region by 2045.

GEOGRAPHIC SCOPE

- All public water users in Great Bend Prairie Water District
- All lawn irrigators in Great Bend Prairie Water District
- All lawn landscape operators in Great Bend Prairie Water District

REGULATION/POLICY CHANGES

- None -- Retain KSA 82a: Waters and Watercourses; Article 21, Clean Drinking Water Fee
- NOTE: "Guiding Principle Ensure regulations and programs put into place are reviewed to ensure various water use groups are not adversely affected by regulations and programs intended for an individual water use group"
- NOTE: Clean Drinking Water Fee – Senate Bill 332 (2001 Legislative Session) Implementation.
    - The Clean Water Drinking Fee is paid by city water departments, rural water districts and any other organization selling water. Collectively all of these organizations are called 'public water supply systems.' The Clean Drinking Water Fee is three (.03) cents per 1,000 gallons of water sold. The law specifically forbids the public water supply systems from adding this fee to their customers' water bill.
    - The Clean Drinking Water Fee is reported quarterly on the same form as the Water Protection Fee. The return requires two entries - one for the Water Protection Fee and one for the Clean Drinking Water Fee.
- KSA: July 1, 2007, 5/106 of such amount shall be credited to the state highway fund and the remaining amount shall be credited to the state water plan fund created by K.S.A. 82a-951, and amendments thereto, for use as follows: (A) Not less than 15% shall be used to provide on-site technical assistance for public water supply systems, as defined in K.S.A. 65-162a, and amendments thereto, to aid such systems in conforming to responsible management practices and complying with regulations of the United States environmental protection agency and rules and regulations of the department of health and environment; and (B) the remainder shall be used to renovate and protect lakes which are used

directly as a source of water for such public water supply systems, so long as where appropriate, watershed restoration and protection practices are planned or in place.

- Proposal for Increase to 13 cents. HB 2014 “Since municipal water fees and clean drinking water fees, which are largely paid by public water systems, are already responsible for about half the total revenue for the water plan fund, those fees should not be increased,” the league’s legal counsel, Michael Koss, said in a memo to legislators.

GREAT BEND PRAIRIE PRIORITY GOAL #3

ENHANCE THE MONITORING OF POOR QUALITY WATER IN AREAS WHICH HAVE SALT WATER DISPOSAL LINES, DISPOSAL WELLS AND AREAS WITH HIGH SALT SOURCES TO ENSURE THAT CONTAMINATION OF FRESH WATER SOURCES DOES NOT OCCUR AS WELL AS TO STOP AND REVERSE FURTHER CONTAMINATION OF FRESH WATER SOURCES. ESTABLISH A SELF-REPORTING PROGRAM UNDER PENALTY OF LAW IF A PROBLEM IS OBSERVED TO ENSURE THE PROBLEM DOES NOT GET WORSE. START USING MAPPING TECHNIQUES AND DISPOSAL LINE MAINTENANCE AND REPLACEMENT TO ENSURE THIS GOAL IS MET. SET UP A REVIEW PROGRAM BY 2020.

ACTION STEPS

- Evaluate extent of KDHE surface water monitoring network in petroleum producing areas and areas with high salt sources within Great Bend Prairie Regional Planning Area.
    - Work with KDHE to modify surface water monitoring network if evaluation finds that necessary.
- Develop inventory of current active and legacy salt water disposal lines in Great Bend Prairie Regional Planning Area.
- Continue programs to evaluate current extent of salt water disposal well inventory.
- Evaluate effectiveness of current spill and escape notification requirements.
    - Work with KCC to modify current spill and escape notification requirements if evaluation finds that necessary.
- For all Sensitive Groundwater Areas in the Great Bend Prairie Regional Planning Area:
    - Check the integrity of active and known legacy disposal systems.
    - Investigate the integrity of plugged abandoned wells suspected of leaking.
    - Continued programs to conduct Mechanical Integrity Tests on all injection or disposal wells.
    - Develop a routine groundwater quality program to help determine extent and sources of contamination.
- Educate public in Great Bend Prairie Regional Planning Area about causes and trends of salinity issues.

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- Kansas Corporation Commission, Environmental Protection Agency, Kansas Department of Health and Environment, Kansas One-Call, GMD5, Kansas Geological Survey, Kansas Water Office, Petroleum Industry, Local Landowners

RESOURCES NEEDED

- Financial resources for development of inventory of active and legacy saltwater disposal lines (cost TBD).
- Financial resources for development of continuous groundwater quality program (cost TBD).
- Technical/financial resources associated with evaluations, inventories, investigations, and tests (cost TBD).

TIMEFRAME OF COMPLETION

- All action steps should be completed or initiated by 2026.

GEOGRAPHIC SCOPE

- Past and current oil production areas within Great Bend Prairie Planning Region and Sensitive Groundwater Areas.

REGULATION/POLICY CHANGES

- Explore reporting requirement exemptions noted in K.A.R. 82-3-603(b)(3)
- Disposal lines should be GPSed and tracer lines installed.
- One-Call will contact the operator to identify lines.
- Proposal for Increase to 13 cents. HB 2014 “Since municipal water fees and clean drinking water fees, which are largely paid by public water systems, are already responsible for about half the total revenue for the water plan fund, those fees should not be increased,” the league’s legal counsel, Michael Koss, said in a memo to legislators.

GREAT BEND PRAIRIE PRIORITY GOAL #4

INITIATE RESEARCH AND DEVELOPMENT OF FEED WHEAT AS AN ALTERNATIVE FEED SOURCE WITHIN THE GREAT BEND PRAIRIE PLANNING REGION. TECHNOLOGY TRANSFER FROM THIS RESEARCH WOULD HAVE BENEFITS IN AREAS OF KANSAS WHERE WATER IS NOT AVAILABLE FOR PRODUCTION OF WATER-INTENSIVE CROPS. DUAL RESEARCH PROGRAM: PLANT BREEDING AND LIVESTOCK FEEDING. ACHIEVE LARGE SCALE FEEDING TRIALS BY 2025.

ACTION STEPS

- Coordinate with the Kansas Department of Agriculture (KDA) to improved adoptability of feed wheat, along with other alternative crops, through marketing, commodity segregation, research and education as stated within the *Vision for the Future of Water Supply in Kansas*.

- Create a program to be able to roll out small and large scale feeding trials

    - Find several feedlots to help roll out program

    - Utilize membership of stakeholder groups to solicit interest

- Coordinate with KDA to implement demonstration plots for yield evaluation within the Great Bend Prairie Regional Planning Area.

- Coordinate with KDA develop markets for Great Bend Prairie-grown feed wheat and other alternative crops for use feed sources.

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- Kansas Department of Agriculture; Kansas State University; Other regional research institutions; Kansas Wheat Commission; Kansas Association of Wheat Growers; Kansas Farm Bureau; Kansas Livestock Association; Private wheat breeders; Grain Industry; Feedlot Industry; Local Producers; Kansas Water Office

RESOURCES NEEDED

- Funding for field trials in the Great Bend Prairie Regional Planning Area.

TIMEFRAME OF COMPLETION

- Achieve small scale feeding trials by 2018.

- Achieve large scale feeding trials by 2025.

GEOGRAPHIC SCOPE

- Anywhere within the Great Bend Prairie Regional Planning Area.

REGULATION/POLICY CHANGES

- None

GREAT BEND PRAIRIE PRIORITY GOAL #5

WORK TOWARDS SUSTAINABILITY OF WATERSHEDS SO THAT FLOOD CONTROL CAPACITY IS MAINTAINED WHILE MAINTAINING STREAMFLOW TO MEET DOWNSTREAM WATER NEEDS. PROGRESS TOWARDS SUSTAINABILITY WOULD BE TO HAVE 50% OF THE DRAINAGE AREA WITHIN WATERSHED DISTRICTS CONTROLLED BY WATERSHED STRUCTURES BY 2065. BEST AVAILABLE INFORMATION/DATA WILL BE EVALUATED EVERY 10 YEARS TO TRACK PROGRESS TOWARDS MEETING THIS GOAL.

ACTION STEPS

- Determine percent controlled by watershed structures within watershed districts in Great Bend Prairie Regional Planning Area.

- Work with landowners to promote watershed dams and the important role they have in the community and environment.

- Work with watershed boards and community leaders.

- Determine groundwater recharge potential of watershed structures through modeling efforts.

- Work with watershed districts to determine costs (needs inventory) associated with building additional structures leading up to 50% of drainage area within districts controlled by structures.

- Evaluate the potential of a Multipurpose Small Lake through KDA-DOC in the Great Bend Prairie Regional Planning Area.

RESPONSIBLE AND ASSISTING AGENCIES/ORGANIZATIONS

- Wet Walnut Watershed District; Pawnee Watershed District; State Association of Kansas Watersheds; U.S. Army Corps of Engineers; Kansas Department of Agriculture; Division of Water Resources; Division of Conservation; KDWPT; NRCS; Ducks Unlimited; The Nature Conservancy; KWO

RESOURCES NEEDED

- TBD pending outcome of needs inventory.
- Financial resources for modeling

TIMEFRAME OF COMPLETION

- 50% of the drainage area within watershed districts controlled by watershed structures by 2065.

GEOGRAPHIC SCOPE

- Watershed districts within the Great Bend Prairie Regional Planning Area.

REGULATION/POLICY CHANGES

- Many federal regulations provide challenges:

    - Mitigation requirements
    - 3rd party easement requirements
    - Stream mitigation guidelines (getting credit for pool area as to how it relates to creation of habitat).

KANSAS REGIONAL ADVISORY COMMITTEE ACTION PLANS

KANSAS PRIORITY GOAL #1

INCREASE WATER STORAGE CAPACITY AND AVAILABILITY IN FEDERAL RESERVOIRS. BY 2020, PURCHASE ALL AVAILABLE STORAGE IN FEDERAL RESERVOIRS TO SECURE AN ADEQUATE WATER SUPPLY FOR THE REGION. BY 2025, EVALUATE THE ABILITY TO RAISE THE CONSERVATION POOL IN EACH FEDERAL RESERVOIR.

ACTION STEPS

- Increase water storage capacity and availability in federal reservoirs. By 2020, purchase all available storage in federal reservoirs to secure an adequate water supply for the region.

    - The Kansas Water Office should conduct an analysis of the impacts of the draw downs at Milford, Tuttle Creek and Perry reservoirs due to Missouri River navigation support. The results

of this study will inform the decision as to whether or not to accelerate the purchase of the remaining storage at the aforementioned reservoirs.

  - Working with Kansas River Water Assurance District, KDHE, KDWPT and other stakeholders, determine the amount of storage necessary within Milford and Perry reservoirs to meet instream purposes through controlled releases.

  - Complete necessary background work to support a request to reallocate storage from water supply to water quality in Milford and Perry reservoirs.

  - Determine amount of additional annual costs for calling into service the remaining water supply storage not needed to meet instream purposes and request full funding. When funding is secured, call into service storage not to be included within reallocation request.

  - Request reallocation of remaining storage from water supply to water quality.

- By 2025, evaluate the ability to raise the conservation pool in each federal reservoir.

  - Using existing modeling, determine amount of additional yield that can be gained in each reservoir by permanently raising the conservation pool by 1, 2 and 3 feet.

  - Working with Kansas River Water Assurance District, KDHE, KDWPT, KDA-DWR and other stakeholders, begin NEPA evaluation of impacts and benefits at the reservoirs with increased pool level

  - Work with the U.S. Army Corps of Engineers (USACE) to determine updated costs of reallocation and purchase of storage.

  - Secure federal funding for reallocation study.

  - Where feasible and appropriate based on cost and impact evaluation, request the USACE reallocate storage from flood control to water supply storage.

- The Kansas Water Office shall gather data to determine steps to maintain consistent storage levels at specific reservoirs. As a long term goal, KWO should incorporate existing studies and information to study the possibility of future dredging and other measures by the State of Kansas on a more consistent basis to maintain storage.

- As articulated in the "*Basin Restoration Approach: Kansas Lower Republican,"* the Kansas RAC directs the KWO to improve coordination with the USACE on reservoir releases, management plans, and future actions to address water quality and quantity issues.

KANSAS PRIORITY GOAL #2

BY 2050, EXPLORE ADDITIONAL STORAGE POSSIBILITIES SUCH AS CONSTRUCTION OF MULTIPURPOSE LAKES SO THAT NEW WATER SOURCES CAN BE BROUGHT ONLINE.

ACTION STEPS

- Use the existing Kansas Water Office "*Basin Restoration Approach: Kansas Lower Republican"* as a guide for planning future storage in the Region.
- Maintain an updated inventory of existing reservoir sites not built, along with pertinent data.
- Contract with a consulting firm to determine the feasibility of building larger reservoir sites based on the "New Site Selection Criteria" from the "*Basin Restoration Approach: Kansas Lower Republican",* with the addition of the potential sedimentation rate and upstream protection practices.
- Working with KDA-DOC, NRCS and local watershed districts, identify existing watershed structures that are in need of restoration and have potential to be made larger and provide supplemental water supply.
- Working with KDA-DOC, NRCS and local watershed districts, identify watershed dam sites that were not constructed, but could be built to provide supplemental water supply.
- KWO shall develop criteria to determine whether these sites should be expanded or built based on a broad range of issues.
- Seek partnership and funding opportunities to rehabilitate existing watershed reservoirs and/or construct new reservoirs that meet the established criteria.

KANSAS PRIORITY GOAL #3

REDUCE THE CUMULATIVE SEDIMENT RATE OF FEDERAL RESERVOIRS AND OTHER WATER SUPPLY LAKES BY 10 PERCENT IN THE KANSAS REGION EVERY 10 YEARS THROUGH IMPLEMENTATION OF WATERSHED BEST MANAGEMENT PRACTICES.

ACTION STEPS

- Utilize the Kansas Basin Watershed Management System (KBWM System) to reduce the overall sediment rate by 10 percent for the entire Kansas basin, not per reservoir, over 10 years.
    - All new funding allocated to meet RAC sedimentation reduction goals will utilize the KBWM System. See the attached document for a description of the KBWM System as well as a process chart illustrating how it functions.
    - KBWM System utilizes and provides for the implementation of best management practices (BMPs) related to the reduction of sediment loading, which include a large range of measures.

Approval and recommendation of BMPs for sediment reduction will be determined by the KBWM Interagency Committee (refer to KBWM System description).

- This is accomplished by funding a minimum of $5 M annually to the System specifically for the reduction of sedimentation in the Kansas basin. At this funding rate, the goal is expected to be achieved within 30 years.

- Within five years, all state and federal lands surrounding each reservoir in the watershed must have implemented best management practices as identified through the KBWM System.

- Individual WRAPS' plans and conservation district goals must include the concept of reservoir sustainability with the goal of maintaining storage capacity in Kansas Basin reservoirs.

- Reservoir sustainability and reduction of sedimentation must be added as primary goals of the Kansas WRAPS Work Group.

- The KBWM System will allow for the modification or inclusion of additional sedimentation goals as they are developed by Regional Advisory Committees (RACs)

- Establish programs with local universities to leverage relevant departments for expertise and student resources.

- Existing funding allocations will continue to be distributed and managed as they have been historically with an enhanced focus on communication and coordination among funding providers. This increase in communication and coordination is an anticipated byproduct of the KBWM System.

- Additional funding for sedimentation through the KBWM System is critical to meeting the Kansas RAC Sedimentation Goals.

    - One key element of additional funding will be to secure adequate technical assistance advisors and providers for timely delivery and implementation of recommended best management practices.

    - Additional technical assistance at the state level must be developed, even with the current level of funding. NRCS currently provides technical assistance, but due to current funding and decreased staffing capacity, NRCS cannot always meet the state's implementation schedule. With additional state technical assistance providers, NRCS can dovetail and assist with projects, but projects will move forward in the event NRCS is not available. This encourages collaboration between the two groups, and reduces reliance on NRCS.

- Achieving the stated goals requires the broadest participation possible. To affect a science-based solution, it is important that all relevant lands within a specific watershed be analyzed to assess their issues, determine their priority with respect to a defined problem (e.g. sedimentation of reservoirs) and identify and prioritize solutions. This may be a long-term process.

- The Kansas RAC encourages landowners in the Kansas Basin to develop and implement voluntary Comprehensive Conservation Plans for lands in the areas of resource concern.

- Education about the KBWM System and its goals and functions should be included in the Governor's Water Vision Education and Outreach Program

    - Specific educational and outreach programs, resources and items shall be created, distributed and taught throughout the Kansas Basin focusing on the specific goals of the Kansas Basin.

KANSAS PRIORITY GOAL #4

BY 2035, REDUCE PER CAPITA WATER CONSUMPTION BY 10 PERCENT BY 2035 THROUGH CONSERVATION, EDUCATION AND PRICING MECHANISMS.

ACTION STEPS

- The Kansas Regional Advisory Committee (RAC) recognizes the need for water conservation in our region varies widely from year to year, season to season, and even throughout the region during any one time period. Regardless of the season or the current availability of water, the Kansas RAC is committed to promoting and supporting wise water use throughout the region.

- **Action Plan Section 1: Unaccounted For Water**
    - Whether or not water is in short supply, we should always use it wisely. One of the most significant issues that can and should be addressed with regard to water use is unaccounted for water (UFW). This is water that public water suppliers have paid to pump, convey and/or treat, and which is unaccounted for due to leakage in the distribution system, failures within the water utility infrastructure, accounting system errors and/or unmetered water distribution. This UFW calculation currently includes a range of unmetered uses, which includes hydrant flushing, tower flushing for maintenance, etc.

    - The Kansas Municipal Water Conservation Plan Guidelines approved by the Kansas Water Authority (KWA) in 2007 currently recommend that a utility implement a water management review when UFW exceeds 20% for a 4-month period. The average UFW for all utilities in the region in 2014 was 16.6%. The guidelines for the Kansas Region should raise the bar higher by encouraging utilities to undertake the review at 15% for a 4-month period, monitored monthly. The Kansas Water Office (KWO) should ensure technical assistance to conduct those management reviews when necessary, and technical assistance to address acute UFW.

        - Historically, UFW has been difficult to track, as water usage was not metered consistently. By 2017, however, this will change. The Kansas Department of Agriculture, Division of Water Resources required the installation of a flowmeter or other suitable water measuring device on all non-temporary, non-domestic water uses in 2014, with meter installation required for all water users by the end of 2016 and compliance required by the end of 2017. All public water suppliers currently meter their source of supply; a small number, however, remain that do not meter individual customer water usage. The RAC recommends that all public water suppliers implement customer water metering at the earliest opportunity.

        - The water metering requirement and customer metering will allow for all types of water usage to be tracked and analyzed by 2018. The most important short term benefit of the installation of water flow meters is that it will allow for appropriate accounting of water

usage. This accounting not only allows for the identification of the location and nature of leaks in the system, but the information gathered is also critical to determining the nature of water usage and where conservation measures can be wisely implemented. This information will allow communities and individual users to strategize appropriate water usage and save themselves and/or the community water and money over time.

- Over time, large users should be encouraged to sub-meter which will improve their understanding of the nature of their water consumption and allow for more effective implementation of wise water use measures.

- The KWO should educate communities about the availability of funding for utilities to conduct assessments of distribution and transmission systems and develop a proactive replacement and repair schedule to minimize water loss within the system. Utilities should, where feasible, collaborate with larger utility partners in the area for assistance with assessments. The KWO should also actively educate communities about the availability of funding for investments in infrastructure improvements to minimize water loss for all water utilities in the Kansas Region.

- **Action Plan Section 2 - Water Conservation Plans**
    - The KWO should evaluate current conservation plan guidelines adopted by the KWA in 2007, to ensure they adequately address the Vision and Kansas Region goals, and provide assistance in updating plans as necessary.

    - The KWO should work with public water suppliers in the region to ensure that all have an approved water conservation plan consistent with the updated Guidelines approved by the KWA that reflect the Vision and Kansas Region goals.

    - The KWO should work with public water suppliers that have experienced drought vulnerability in the last 10 years to ensure they have robust drought response plans, with meaningful and implementable triggers and responses.

    - The KWO should develop a Best Management Practices (BMP) Conservation Guide for communities, highlighting available resources and success stories. This BMP Conservation Guide shall be updated bi-annually.

    - The Kansas RAC recommends that communities throughout the Kansas Region adopt wise water use in public buildings and on public grounds as identified in the BMP guide.

- **Action Plan Section 3 – Education**
    - The KWO should make use of existing educational resources from federal, state and non-governmental organizations such as the EPA's WaterSense program and WaterSense partners, and materials produced by the American Water Works Association and the Alliance for Water Efficiency.

    - The Kansas RAC supports the mission of the Kansas Water Vision Educational Task Force. Any education efforts should be carried out in collaboration with the Kansas Water Vision Education Program.

- The Kansas RAC will submit the following recommendations to the Kansas Water Vision Educational Task Force.

    - Develop a strategic, unified messaging campaign tailored to the needs of each region that is executed across the state and through all relevant agencies through coordinated messaging methods.

    - Develop a robust and comprehensive website that will serve as a cornerstone of the education campaign.

    - Establish a shared resource center for water suppliers and major users to connect regionally and share best management practices.

- **Action Plan Section 4 – Incentive-based conservation practices**
    - The Kansas RAC will continue to work with stakeholders to research and explore other opportunities to encourage wise use of water in the Kansas Region. The following items are examples of the type of opportunities the RAC will investigate.

    - Consider incentive based conservation practices. Electric utilities use "throughput disincentives" authorized by the Kansas Energy Efficiency Investment Act (KEEIA) to recover revenue lost by conservation measures; something similar might be appropriate for water utilities.

    - Establish criteria that encourage Low Impact Development (LID) that focuses on lowering water use in new developments.

        - Direct the KWO to work with cities to adopt LID design criteria with the goal that city ordinances and any other requirements would encourage less water-intensive fixtures, structures and landscape in new developments.

        - Direct the KWO to award and recognize cities and developers who utilize LID that focuses on water conservation

        - Direct the KWO to proactively promote LID concepts to land developers.

    - Work with utilities to incentivize water efficiency via lower connection rates (or other upfront cost saving incentives) for developers, property and business owners using efficient fixtures, xeriscaping, rain catchment/reuse systems, and other conservation measures.

    - Offer tax credits for practices that reduce consumption without reducing production.

        - With respect to agricultural water use, provide property tax credits proportionate to water use reduction on irrigated agricultural lands.

    - Consider incentives for recycling of water within an entity or community.

- Develop a rewards and recognition program for successful Kansas conservation activities to highlight communities, individuals, businesses and industry that implement local conservation best management practices successfully.

- Create a private "water audit" certification program such as Leadership Energy and Environmental Design (LEED) to identify individuals achieving highly efficient water use and conservation.

- Promote smart water use in public buildings and on public grounds such as lower volume toilets and reduced lawn watering.

- Fund K-State Extension programming on low or no water use landscaping

KANSAS PRIORITY GOAL #5

AFTER 2020, REDUCE DURATION AND FREQUENCY OF HARMFUL ALGAL BLOOMS DISRUPTING RECREATION IN LAKES SUCH THAT BLOOMS LAST UNDER A WEEK AND DO NOT OCCUR UNTIL AFTER LABOR DAY.

ACTION STEPS

- Utilize the Kansas Basin Watershed Management (KBWM) System to reduce the level of nutrients entering the reservoirs and water supply lakes.

    - All new funding allocated to meet RAC nutrient reduction goals will utilize the KBWM System. See the attached document for a description of the KBWM System as well as a process chart illustrating how it functions.

    - KBWM System utilizes and provides for the implementation of best management practices (BMPs) related to the reduction of nutrient loading, which include a large range of measures. Approval and recommendation of BMPs for nutrient reduction will be determined by the KBWM Interagency Committee (refer to KBWM System description).

    - This is accomplished by a minimum allocation of $1.5 million per year to be directed to BMPs in the Milford Watershed, with a total request of $3 million per year, with the remaining $1.5 million to be distributed throughout the watershed through the KBWM System.

- Within five years, all state and federal lands surrounding each reservoir in the watershed must have implemented best management practices to address harmful algal blooms (HABs) as identified through the KBWM System.

- Individual WRAPS' Plans and local Conservation Districts' goals must include the concept of minimizing nutrient inflow to lakes with the goal of reducing the potential for HABs.

- The reduction of nutrients must be added as a primary focus of the Kansas WRAPS Work Group.

- The Kansas Water Office and the Kansas Department of Health and Environment must coordinate with the US Army Corps of Engineers (USACE) on management of releases during HABs, and provide notice to downstream communities of the level of release.

- Ensure that the Kansas Water Office and KS RAC promote the inclusion of lake communities, downstream public water supply systems, and other water users into HAB meetings and discussions.

- Underscore that the preferred methodology is to use best management practices (BMPs), which include a large range of measures which will be vetted through the KBWM System. BMPs should be prioritized to address HABs.

- Recognize that in the near-term, dollars will need to be spent on treatment of the problem in the lakes (e.g. chemical treatment), but the goal is to shift those dollars upstream to prevention of the problem at the source – which is to prevent nutrients from flowing into the lakes.
- The RAC supports ongoing research for identification and remediation of the causes, prevention and treatment of HABs, including potential in-lake technologies.

- Establish programs with universities to leverage relevant departments for expertise and student resources.

- Achieving the stated goals requires the broadest participation possible. To affect a science-based solution, it is important that all relevant lands within a specific watershed be analyzed to assess their issues, determine their priority with respect to a defined problem (e.g. HABs) and identify and prioritize solutions. This may be a long-term process.

- The RAC encourages landowners in the Kansas Basin to develop and implement voluntary Comprehensive Conservation Plans for lands in the areas of resource concern.

- Education about the KBWM System and its goals and functions should be included in the Governor's Water Vision Education and Outreach Program.

    - Specific educational and outreach programs, resources and items shall be created, distributed and taught throughout the Kansas Basin focusing on the specific goals of the Kansas Basin including the reduction of HABs.

    - Establish a region wide education and communication plan with regard to HABs and include best and worst management practices.

KANSAS REGIONAL ADVISORY COMMITTEE BASIN WIDE WATERSHED MANAGEMENT SYSTEM

- The Kansas Basin Watershed Management System (KBWM) is a System proposed by the Kansas RAC to be used for all new funds allocated to meet the relevant Kansas Regional Goals.

- The KBWM System is based on four key principles, all of which must be met in order for projects to receive (new) funding.

- Action is Grassroots – Property owners in a targeted region must be an integral part of the process. Property owners' input informs the prioritization of projects for the watershed. "Action is Grassroots" means that all projects are voluntary, and that local landowners continue to work through existing systems and programs to coordinate, encourage, and commit to high priority projects. This allows for bottom-up decision-making as local landowners utilize their knowledge of the region to determine what projects are best for the area.

- Watershed Based – All projects and associated funding are prioritized based on the needs in the watershed rather than political boundaries.

- Science-Based Prioritization – All projects and associated funding are prioritized through a science-based system within the watershed.

- Outreach – Critical projects within a watershed are identified, and outreach is conducted to encourage and support participation by key (high priority in the watershed based on science-based analysis) property owners in the watershed.

- The KBWM System is coordinated by the Kansas Water Office, and consists of an Interagency Watershed Committee and an Interagency Watershed Leadership Team. (See attached chart).

  - The Kansas Water Office serves as the initial repository of new funds.

  - The Kansas Interagency Watershed Leadership Team is made up of 1 Representative from Each Member Group

    - Kansas Water Office (Coordinator)
    - KDA - Division of Conservation
    - KDHE – WRAPS
    - NRCS
    - Kansas Forest Service
    - Kansas RAC

  - The Leadership Team is coordinated by the Kansas Water Office.

  - The Interagency Watershed Leadership Team is responsible for prioritization on a watershed basis, allocation of funding and accountability.

  - The Interagency Watershed Leadership Team coordinates all key agencies to ensure that efforts are coordinated, not duplicative, and allows for the greatest leverage of all funding allocated to a region.
  - The Interagency Watershed Leadership Team would develop recommendations on distribution of funding (local, state, or federal) to the appropriate region and entity.

  - The Interagency Watershed Leadership Team would be represented at annual Kansas NRCS State Technical Committee Meetings to request assistance in the implementation of the action plans and to advocate for USDA resources to be targeted to best management practices (BMPs) in KS RAC priority areas.

- The Kansas Interagency Watershed Committee is a broader group where much of the work of region prioritization and accountability is done.

- The Kansas Interagency Watershed Committee is managed by the Kansas Water Office.

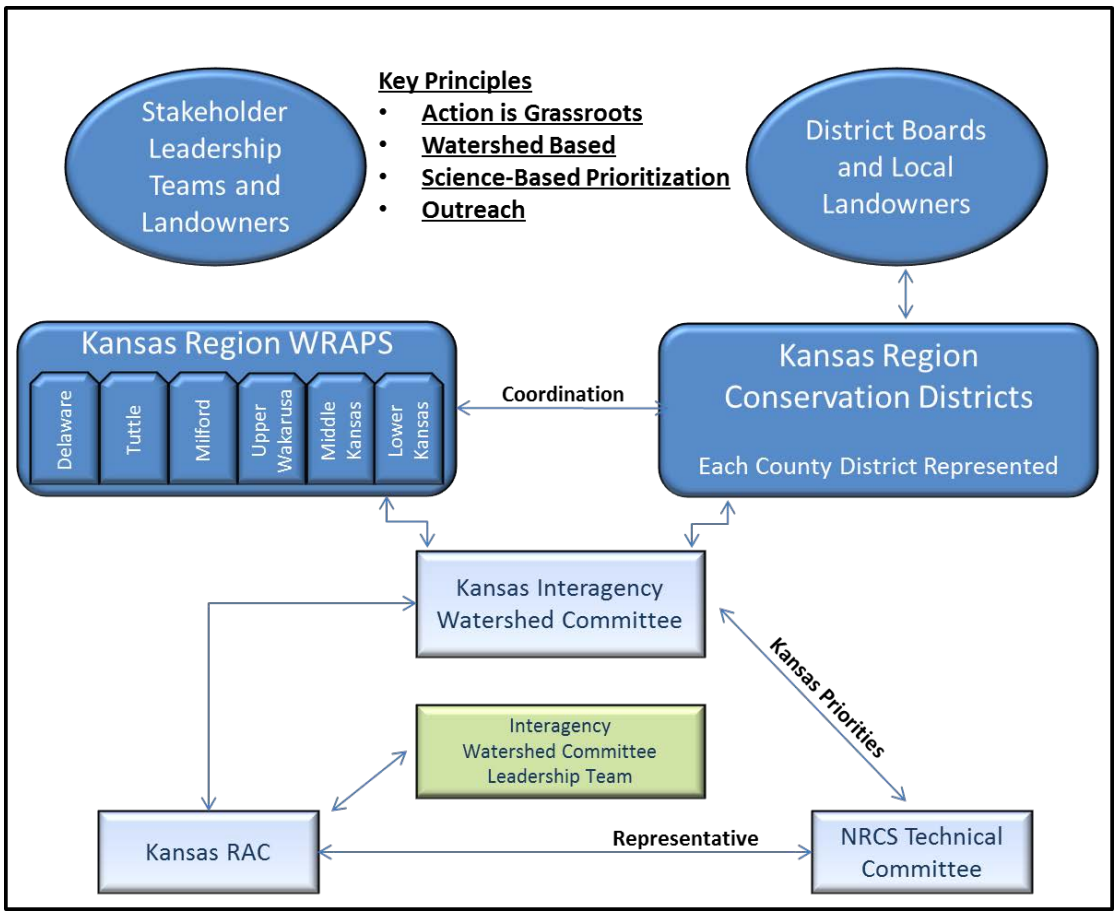
- The KBWM System expands upon the already existing coordination among relevant state and federal agencies.

- The KBWM System encourages cross-jurisdictional coordination with the State of Nebraska and federally-recognized Tribes.

- The KBWM System is designed to incorporate additional goals as they are developed by Regional Advisory Committees (RACs).
- The KBWM System allows for the utilization of all best management practices (BMPs), which include a large range of measures, as established by the Interagency Watershed Committee Leadership Team and informed by the Kansas Interagency Watershed Committee.

- The methodology of allocation of funding will be determined by the Interagency Watershed Committee Leadership Team.

- The KS RAC will request an annual report from all entities involved in BMP implementation in the watershed and RAC targeted areas. This annual report will commence in 2016 for all existing and future funding sources.



MARAIS DES CYGNES PRIORITY GOAL #1

REDUCE CUMULATIVE SEDIMENT LOADS ENTERING PUBLIC WATER SUPPLY IMPOUNDMENTS BY 10 PERCENT IN THE MARAIS DES CYGNES RIVER BASIN EVERY 10 YEARS TO EXTEND THE LIFE OF EXISTING INFRASTRUCTURE.

MARAIS DES CYGNES PRIORITY GOAL #2

INCREASE SOURCES OF SUPPLY, AT A MINIMUM OF ONE MULTIPURPOSE STRUCTURE, TO MEET INCREASED DEMAND IN SPECIFIC GROWTH AREAS BY 2035. IN ADDITION, ENSURE WATER SUPPLY AVAILABLE FROM STORAGE EXCEEDS PROJECTED DEMAND BY AT LEAST 10% THROUGH THE YEAR 2050.

ACTION STEPS

- A RAC representative will work with each WRAPS group within the Marais des Cygnes Region to assess their 9 Element Plan and their willingness to work with the RAC to meet the Marais des Cygnes Regional goal of sedimentation reduction. A RAC representative will also work with each conservation district within the Marais des Cygnes Region to assess their goals and their willingness to work with the RAC to meet the Marais des Cygnes Regional goal of sedimentation. If the goals of the conservation district and the 9 Element Plan of the WRAPS groups align with the RAC sedimentation goal then funding will be sought to leverage funds to meet Regional Goals. These two groups have a system in place to distribute cost share funds and to identify projects that need to be implemented to decrease sedimentation. They also provide educational opportunities for landowners.

- In order to fund these efforts, the first plan of action is to not create a new funding source, but instead to ensure current funding sources are funded; we cannot continue to see funds being diverted away from water quality, water quantity and water conservation efforts within the state budget if we truly want to work to reach the goals of the RAC and the Vision. This would also include working to see that the State Water Plan Fund is funded to maximum levels and funds from the State Water Plan are allocated as they were originally intended; this should include pesticide and fertilizer fees being rerouted back into the water plan fund and therefore assisting with funding goal implementation. If these funds are not adequate, then new sources will need to be sought. These sources could include, but are not limited to applying a 1 cent/1000 fee on water used by all beneficial uses not already paying a usage fee and or a 1 to 3 cent per bottle water tax applied to bottled water sold in Kansas.

- RAC members will also encourage local support of goal implementation through conservation districts, WRAPS groups, producers, municipalities, etc. This will be done through education and awareness of the RAC.

- The Kansas Water Office, along with the Marais des Cygnes RAC, will evaluate cost estimates of calling-in the unallocated storage in Melvern Reservoir, as well as the evaluation of a pool rises at Pomona and Hillsdale Reservoirs with the estimated cost of constructing a new reservoir for water supply. The entire Marais des Cygnes Region's population projections will be evaluated for their supply needs to

ensure that the demand can be met and exceeded by 10% through the year 2050. Both mainstem and off-stream storage supply will be evaluated to ensure all counties within the Marais des Cygnes region have their water supply needs met. The reduction of sediment loads created by the work with the WRAPS groups and the Conservation Districts to implement BMPs such as, but not limited to, cover crops, No-Till, terraces, etc. will be evaluated for these practices' potential to meet projected water needs through 2050, and, as an alternative to constructing a new storage structure. The RAC is, in effect, going to consider whether Goal 2 can essentially be met by achieving Goal 1 in conjunction with purchasing the reserve supply in Melvern Reservoir and the already purchased, but largely underutilized, supply in Hillsdale Reservoir.

MISSOURI REGIONAL ADVISORY COMMITTEE ACTION PLANS

MISSOURI PRIORITY GOAL #1

SINCE GROUNDWATER QUALITY IS NOT WELL KNOWN, COMPILE EXISTING AND COLLECT ADDITIONAL DATA OVER THE NEXT 5 YEARS TO ESTABLISH A BASELINE. WITHIN 3 YEARS AFTER THE BASELINE IS ESTABLISHED, A PLAN TO IMPLEMENT BEST MANAGEMENT PRACTICES WILL BE DEVELOPED TO MAINTAIN AND IMPROVE EXISTING CONDITIONS. MONITORING AND REEVALUATION OF GROUNDWATER QUALITY CONDITIONS AND SHOULD CONTINUE AT 5 YEAR INTERVALS.

MISSOURI PRIORITY GOAL #3

COLLECT ADDITIONAL INFORMATION TO IMPROVE SAFE YIELD ESTIMATE OF GROUNDWATER AND TRIBUTARY STREAMS WITHIN 3 YEARS. PLACE A MORATORIUM ON ADDITIONAL PERMITS UNTIL SAFE YIELD IS IDENTIFIED. ONCE DETERMINED, ONLY ISSUE PERMITS THAT DO NOT EXCEED THAT YIELD. SAFE YIELD SHOULD THEN BE CONTINUOUSLY MONITORED.

PREAMBLE

Groundwater quality and groundwater quantity are closely related and the approaches to understanding each are similar. For that reason, the 2 goals and the overall guiding principle are recognized in this action plan.

GUIDING PRINCIPAL

Over the next 50 years, there needs to be an adequate, sustainable and affordable quality water supply in the Missouri Region, while protecting Tribal water rights and sacred and cultural sites. All government agencies, local through state, shall vigorously uphold and enforce all water conservation and management rules and regulations throughout the state.

ACTION STEPS

- Evaluate what is known about groundwater quantity and quality in glacial, alluvial and bedrock aquifers in the Missouri Region
    - Any and all available information about groundwater quality and quality will be collected and compiled.

- Digital database from the collected historical and online existing data would be constructed.

- Digital maps of updated bedrock surface topography, saturated aquifer thickness, pre-glacial drainage ways, water use, and groundwater quality from digital databases would be prepared

- An assessment report would be prepared that includes:

    - A determination of groundwater in storage and groundwater quality conditions in the glacial, alluvial and bedrock aquifers in the area.
    - A determination of the greatest needs for collection of additional data.
    - Recommendations on the need for, and number and location of wells to allow for well level and quality monitoring on a continuing basis.

- This phase would be conducted by the KGS for at a cost of $50,000. The work would take 12 months, beginning August 2016.

- Collection of additional data and re-evaluation of groundwater information

    - Based on needs as determined in the evaluation phase, obtain a scope of work on collection of additional data that would improve the characterization of the glacial, alluvial and bedrock aquifers. Main expected field activities would include: drilling, hydraulic testing, and groundwater sampling and analysis.

    - Enter new data into databases developed in the evaluation phase.

    - Re-evaluate groundwater recharge estimates at a more detailed scale than the currently available potential annual recharge estimates based on soils.

    - Combine existing and new data to establish safe groundwater yields and a groundwater quality baseline

    - On the basis of future climate and water usage conditions, establish a plan to periodically update safe yield estimates of groundwater resources.

    - This phase would be a minimum of 18 months, as determined in the evaluation phase. Cost would be determined in Phase 1.

- Maintain and Improve groundwater quality conditions

    - Evaluate groundwater quality protection practices based on needs as determined in the assessment.

    - Within 3 years after the baseline is established, a plan to implement best management practices will be developed to maintain and improve existing conditions.

- Ongoing monitoring and evaluation
    - Expand groundwater level monitoring wells as determined during Assessment phase.
    - Monitoring and reevaluation of groundwater quality conditions should continue at 5 year intervals.

MISSOURI PRIORITY GOAL #2

TO ENSURE A RELIABLE SURFACE WATER SUPPLY IN THE FUTURE, BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED SO SURFACE WATER QUALITY IN IDENTIFIED DRAINAGES IS MAINTAINED OR IMPROVED USING GOALS AND MILESTONES AS IDENTIFIED IN THE MISSOURI WATERSHED RESTORATION AND PROTECTION AREA 9 ELEMENT PLAN.

GUIDING PRINCIPAL

Over the next 50 years, there needs to be an adequate, sustainable and affordable quality water supply in the Missouri Region, while protecting Tribal water rights and sacred and cultural sites. All government agencies, local through state, shall vigorously uphold and enforce all water conservation and management rules and regulations throughout the state.

ACTION STEPS

- Collection of Additional Data
    - Collect data on a voluntary basis to evaluate the benefits of tile outlet terrace systems within the Missouri Region. Prior to proposing any design changes to outlets of tile terraces in the Missouri Region, conduct research on cropland field input amounts (rates, dates applied, how it was applied, etc.) and collect water samples to evaluate the water runoff into the streams in the region. Collect data working with interested local landowners with assistance of area conservation districts, Kansas Department of Health and Environment (KDHE), Natural Resources Conservation Service (NRCS) and other existing agencies. Collection sites will be: tile terrace runoff, waterway runoff, land with no conservation work or no conservation tillage, and land with no conservation work but using no-till.
    - Collect data on the benefits of capturing and reusing water on a producer's property.
    - Gather existing information on the impact of extreme events (droughts and floods) on water quality and availability of water resources into the future in the Missouri Region.
    - Assess what other interest groups, agencies and individuals locally and from states with similar topography and precipitation (Iowa, South Dakota, Nebraska, and Missouri,) can provide on alternative projects that could contribute to water quality in the Missouri Region.

- Implementation

    - Support and encourage implementation of the best management practices (BMPs) in the adopted 9-Element Plan. Those BMPs are: No-till, cover crops, grassed and forested buffers, convert steep slopes, sediment basins, pasture management, nutrient management, livestock waste management, alternative watering supplies, streambank stabilization, onsite wastewater system repair, urban lawn management, pet waste management. The Plan should be updated every 5-years.

    - Focus on finding local volunteers that are willing to adopt and promote new practices, including streambank stabilization.
    - Ensure the value of maintenance of BMPs is understood to allow BMPs to have the desired long term effects, through education and outreach.

    - Recognize the value of protection of water quality through education and outreach.

    - Prevent sedimentation by using existing cost - share programs through the Kansas Department of Agriculture, Division of Conservation (DOC); KDHE; and NRCS, to fund conservation practices in the Missouri Region.

    - Continue to use the NRCS for technical assistance on implementation practices suited to the unique topography of the Missouri Region.

    - Prioritize the existing ranking systems from agencies, to secure funding for protecting water quality and water supply in the Missouri Region.

    - Raise awareness about water quality and the importance of proper urban lawn application.

- Monitoring

    - Determine if additional monitoring sites are needed to better characterize and prioritize project priorities in the Region.

- Funding Needs

    - To ensure water quality is maintained and improved, the state should fully fund the Kansas Water Plan for implementation of best management practices through programs of the DOC, KDHE and others as needed.

    - Ensure continued and improved coordination with the NRCS to access and make the best use of funding for priority projects for water quality protection in the Region.

    - Assess possible involvement of other agencies, businesses and interest groups to determine interest and possible funding of water quality projects in the Region.

    - Continue to ensure that funding from the Clean Drinking Water Fee Fund for technical assistance for small public water supply systems is maintained at least at the current level.

- Include funding for streambank stabilization projects as identified in the WRAPS 9 Element Plan.

- Fully fund the 9-Element Plan implementation (approximately $140,000/year).

- Develop a funding strategy within the next year for additional data collection and implementation as identified above in a phased manner in conjunction with DOC, NRCS, and KDHE and others as appropriate. Funding needs will then be reviewed on an annual basis and brought to the KWA.

NEOSHO REGIONAL ADVISORY COMMITTEE ACTION PLANS

NEOSHO PRIORITY GOAL #1

PROLONG THE WATER SUPPLY STORAGE IN JOHN REDMOND RESERVOIR TO THE YEAR 2065 BY REDUCING THE SEDIMENTATION RATE BY AN AVERAGE OF 300 ACRE-FEET PER YEAR THROUGH WATERSHED PRACTICES SUCH AS NO-TILL, FILTER STRIPS AND STREAMBANK STABILIZATION. BY 2025, ALL STREAMBANK HOTSPOTS WILL BE STABILIZED. BY 2030, 80% OF THE PRIORITY CROPLAND IN NEED OF CONSERVATION WILL BE TREATED WITH NO-TILL PRACTICES.

ACTION STEPS

- The Kansas Water Office (KWO) is directed to work with the Streambank Team (KWO, KDHE, and KDA-DOC) to stabilize all streambank hotspots, as defined by the KWO, by 2025 in the Cottonwood-Neosho Region above John Redmond Reservoir. Funds will need to be created to fund the stabilization of the streambanks each year to complete reaches in order as they proceed from the reservoir.

- The Kansas Water Office, in cooperation with the Kansas Department of Health and Environment, the Kansas Department of Agriculture-Department of Conservation, and the local WRAPS groups, is directed to treat 80% of priority cropland, as defined by the WRAPS 9 element plans, with no-till practices, such as cover crops. In addition, treat with other sedimentation reduction farming practices, filter strips, terraces, and waterways by 2030 in the Cottonwood-Neosho Region above John Redmond Reservoir. Additional funds will need to be created to fund this action as well.

    - As a component of this plan a review of the sedimentation rate of John Redmond Reservoir will be evaluated. This evaluation will include scheduling and completing a bathymetric survey every 5 years and installing sedimentation monitoring stations to monitor the sedimentation rate and the progress and benefit of sedimentation reduction practices.

    - As an additional component, the effectiveness of best management practices for effects on hydrology and reduction of sediment and nutrients will be assessed and the information and education will be provided to those implementing practices. The education and information portion can be accomplished through the implementation of a Water Technology Farm (WTF) that incorporates no-till practices and other agriculture BMPs that address sedimentation, along with a possible streambank stabilization project.

- To ensure that there are funds available each year a steady funding source must be establish. The best funding source at this time appears to be the issuing of bonds to commence early implementation, and is recommend by the RAC, however, other funding sources are not excluded. Bonds should be sought at an amount no less than 8.5 million/year.

NEOSHO PRIORITY GOAL #2

REDUCE VULNERABILITY TO DROUGHT BY THE INCREASING RESERVOIR STORAGE AT MARION AND COUNCIL GROVE RESERVOIRS THROUGH A PERMANENT RAISE IN CONSERVATION POOL ELEVATION. BY 2025, EVALUATE THE FEASIBILITY OF PERMANENT CONSERVATION POOL RISE AT MARION AND COUNCIL GROVE RESERVOIRS. BASED ON THE OUTCOME AND FINDINGS OF THE FEASIBILITY STUDY, STAGE INCREASES IN PERMANENT POOL ELEVATION BASED ON SUPPLY NEEDS. ENSURE WATER SUPPLY AVAILABLE FROM STORAGE EXCEEDS PROJECTED DEMAND BY AT LEAST 10% THROUGH THE YEAR 2050.

ACTION STEPS

- The Kansas Water Office will continually work with the U.S. Army Corps of Engineers on refining reservoir operations and developing Drought Contingency Plans.

- A working group will be created that provides input on the pool rises at Marion, Council Grove, and John Redmond Reservoirs. This group will include the KWO, KDWP&T, KDHE, NRCS, USACE, and USFW.

    - The working group will look at costs associated with the pool rises and the benefits of increased supply.

- Based on the input from the working group and the cost benefit ratio analysis, the feasibility of the pool rises at Marion, Council Grove, and John Redmond Reservoirs will be determined by 2025. Based on that determination, a reallocation study may be implemented.

NEOSHO PRIORITY GOAL #3

REDUCE FREQUENCY OF ALGAL BLOOMS IN MARION RESERVOIR TO NO MORE THAN EVERY 3 YEARS THROUGH 2035. EVALUATE THE ROLE OF WATER LEVEL FLUCTUATIONS IN REMEDIATING AND REDUCING ALGAL BLOOM FREQUENCY.

ACTION STEPS

- A working group will be created that provides input on the evaluation of the algal blooms at Marion. This group will include the KWO, KDWP&T, KDHE, NRCS, USACE, and USFW.

- The working group will look at costs associated with algal blooms at Marion and determine the methods that would lead to a reduction in blooms.

- Based on the input from the working group and the cost-benefit ratio analysis, the feasibility of algal bloom reduction will be determined.

NEOSHO PRIORITY GOAL #4

INCREASE STORAGE IN BASIN BELOW JOHN REDMOND THROUGH DEVELOPMENT OF ADDITIONAL STORAGE SITES. BY 2020, COMPLETE AN ASSESSMENT OF POTENTIAL RESERVOIR SITES IN LOWER PORTION OF THE NEOSHO PLANNING REGION; INCLUDING POTENTIAL OFF-STREAM STORAGE SITES.

ACTION STEPS

- The Kansas Water Office is directed to create a report by 2020 to determine the feasibility of developing additional water storage in the Cottonwood-Neosho Region below John Redmond Reservoir. The report will include possible locations of off-stream storage sites, and other possible sources of supply, including groundwater sources and water from other Regions. The report will also include a cost-benefit analysis of creating additional storage. As part of the report the Grand River Dam Authority will be encompassed into the conversation to discuss supply and funding options.

NEOSHO PRIORITY GOAL #5

EVERY FIVE YEARS, ASSESS THE EFFECTIVENESS OF BEST MANAGEMENT PRACTICES FOR EFFECTS ON HYDROLOGY, REDUCTION OF SEDIMENT AND NUTRIENT, AND PROVIDE THAT INFORMATION AND EDUCATION TO THOSE IMPLEMENTING PRACTICES. ASSESSMENTS MAY INCLUDE OFF-STREAM STORAGE FOR SEDIMENT AND NUTRIENT TRAPPING, OVERLAND EROSION AND NUTRIENT SEQUESTRATION, IN RESERVOIR SEDIMENT AND NUTRIENT MOVEMENT AND RE-SUSPENSION, AND LANDSCAPE SCALE WATERSHED MODELING PROJECT.

ACTION STEPS

- This goal is met as the other goals' plans are implemented.

RED HILLS REGIONAL ADVISORY COMMITTEE ACTION PLANS

RED HILLS PRIORITY GOAL #1

REDUCE THE RATE OF WATER USE BY 10% THROUGHOUT THE REGION COLLECTIVELY BY 2025. CONSERVATION SHOULD BE VOLUNTARY AND ENCOURAGED TO USE INCENTIVE BASED POLICIES AND PROGRAMS.

ACTION STEPS

- Use average water use for the 10-year period ending 2015 as baseline for water use.
- Identify research needs to determine if and where water (streamflow or groundwater levels) downtrends are occurring for focusing water conservation efforts.
- Add streamflow measurements to access changes to in streamflow and baseflow contributions on Elm Creek and other priority locations, preferably continuous monitoring gages.

- Utilize education/information dissemination as developed for the Vision and region. Should include information on water resources, stresses, conservation tools and water use.

- Identify barriers to conservation in this region.

- Work with local, state and federal programs to offer water conservation programs, including cost-share opportunities.

- Address water use by water use category

    - Irrigation water use

        - Use education and informational meetings to inform operators and landowners on techniques to reduce water use such as water saving technologies, lower water use crops and develop Water Conservation Areas (WCA).

        - Identify barriers hindering operators and landowners from reducing water use.

        - Promote additional tools and programs for reducing water use including a water technology farm in the region.

    - Industrial water use

        - Use Red Hills Goals 3 and 4 to reduce fresh water use in the region.

            - Goal 3: Reduce the amount of freshwater used in oil and gas completion operations by 4% annually.

            - Goal 4: Work with oil and gas industry, beginning in 2040, to have 10,000 barrels a day of fresh water to be recycled from oil production for regional use in the Red Hills.

    - Municipal water use

        - Gather data municipal water use data such as system sources and levels (status), per capita per day usage, rate structures and conservation plans to identify systems using more than the regional average per capital per day per person.

        - Educate communities on benefits of water conservation.

        - Educate decision makers on effective programs to reduce water use or identify water losses and resources available to address losses and upgrade systems.

        - Encourage development and use of water conservation plans.

    - Natural/unaccounted for use by eastern red cedar trees and other invasive species

- Support and assist efforts to evaluate red cedar effect on water resources in the region through NRCS programs such as EQIP and the Kansas RCPP Native Grazing Lands Protection in the Plains project and other efforts to control invasive species on rangeland and drainages. Include efforts to evaluate red cedar water use after the 2016 Barber County fires.

- Gather data on eastern red cedar tree water use in region to establish baseline and need. Such as number of acres affected, number of trees and water consumption data to quantify issue (references needed)

- Use information to educate landowners why and how to eliminate red cedars from rangeland.

- Identify available programs for landowners to address eastern red cedar tree encroachment in the regional planning area.

- Educate landowners to encourage cedar tree control.

AGENCIES/ORGANIZATIONS

- Kansas Department of Agriculture, Kansas Water Office, Kansas-State University, county conservation districts, Natural Resource Conservation Service, local stakeholder groups, and the Nature Conservancy

RESOURCES NEEDED

- Funds needed to complete data gathering and evaluation such as funds to support additional streamflow measurements as determined needed to access changes in stream reaches contributions to major stream baseflow and effect of red cedar tree eradication on these flows.

- Ensure funding for water management and water conservation programs is available in the region.

RED HILLS PRIORITY GOAL #2

INCREASE SOURCES OF SUPPLY THROUGH THE USE OF A MULTIPURPOSE SMALL LAKE TO MEET INCREASED DEMAND IN SPECIFIC GROWTH OR NEED AREAS BY 2035.

ACTION STEPS

- Local efforts will be led by Sunflower H2o Coalition and the Sunflower RC&D who will work to:
    - Determine level of support for a reservoir for recreation and future water supply.
    - Gather public input on possible reservoir for recreation and future water supply.
    - Define project and scope of work for detailed engineering study to move ahead, if local support is sufficient.
    - Obtain funding for Engineering Study

- Initiate Engineering Study.
- Review Engineering Study and formulate future steps.

AGENCIES/ORGANIZATIONS

- Sunflower H2O Coalition, Sunflower RC&D, local government, local stakeholder groups, Kansas Water Office

RESOURCES NEEDED

- Engineering study funding estimated around $225,000 in 2008. Updated need will depend on defining interested area.

RED HILLS PRIORITY GOAL #3

REDUCE THE AMOUNT OF FRESHWATER USED IN OIL AND GAS COMPLETION OPERATIONS BY 4% ANNUALLY.

ACTION STEPS

- Develop background/baseline data on the quantity of produced water, water usage and reuse in the region for use in education and development of appropriate actions.
- Work with industry to use the lowest quality waters possible.
- Work with industry to recycle/reuse flow back and production waters.
  - Contact all oil and gas operators in region to request voluntary use of treated production water for fracking when economically sensible.
  - Provide oil and gas operators with information on use of recycled produced water.
- Share results of Kansas pilot treatment project and other treatment projects.

AGENCIES/ORGANIZATIONS

- Kansas Water Office, Kansas Department of Health and Environment, Kansas Corporation Commission, Kansas Department of Agriculture, stakeholders and industry groups

RED HILLS PRIORITY GOAL #4

WORK WITH OIL AND GAS INDUSTRY, BEGINNING IN 2040, TO HAVE 10,000 BARRELS A DAY OF FRESH WATER TO BE RECYCLED FROM OIL PRODUCTION FOR REGIONAL USE IN THE RED HILLS.

ACTION STEPS

- Work with industry to reduce produced water underground injection quantities.
- Initiate a pilot produced water treatment project in the region.

- Share results of pilot project with industry and citizenry.
- Identify barriers to reuse, such as limiting factors and water quality parameters.
- Identify reuse potential in the region.
- Identify sites for treated (freshwater) water storage for oil and gas industry access for fracking.
- Develop appropriate policy, programs, data or education to address barriers to reuse.

AGENCIES/ORGANIZATIONS

- Kansas Water Office, Kansas Corporation Commission, Kansas Department of Health and Environment, stakeholder organizations

RESOURCES NEEDED

- Pilot Project funding for operation and evaluation estimated $300,000 - $800,000.

SOLOMON-REPUBLICAN REGIONAL ADVISORY COMMITTEE ACTION PLANS

SOLOMON-REPUBLICAN PRIORITY GOAL #1

WITHIN THE NEXT TWO YEARS, DEVELOP A CLEARINGHOUSE OF TECHNICAL TOOLS, AGREEMENTS AND AGENCY PERSONNEL FOR USE ALTERNATIVES FOR SOLOMON-REPUBLICAN REGION WATERS. AN EXAMPLE COULD BE THE MARKETING CONTRACT FOR KEITH SEBELIUS RESERVOIR/ALMENA IRRIGATION DISTRICT THAT REACHED AGREEMENT TO CONVERT IRRIGATION TO RECREATION USE.

ACTION STEPS

- Support KDWPT in their effort to renegotiate the Keith Sebelius Reservoir Minimum Pool Agreement with the Almena Irrigation District.
- Use the Keith Sebelius contract as a model for negotiations on other BOR Reservoirs (Kirwin, Webster)
- Use KBID's knowledge on capturing BOR grants to help improve Webster and Kirwin irrigation efficiency.
- Exhaust all possible funding sources necessary to improve water efficiency.
- Work with KDWPT on an economic study to determine the value of keeping as much water in the Western Reservoirs as possible.
- Initiate a meeting with USF&WS on Kirwin Reservoir facilities and KDWPT's involvement.
- Investigate the benefits of raising the Conservation Pool at both Kirwin and Webster.

SOLOMON-REPUBLICAN PRIORITY GOAL #2

REDUCE INBOUND SEDIMENT LOADS, THROUGH CONSERVATION MEASURES, WITH A FOCUS ON WHITE ROCK CREEK TO LOVEWELL RESERVOIR, BY 25% EVERY 10 YEARS.

ACTION STEPS

- Use KDHE to evaluate sources of sediment entering Lovewell Reservoir.
- Use Kansas and Nebraska data to evaluate suspended solids and nutrients.
- Use data to evaluate the effects of the Courtland Canal on Reservoir loading.

SOLOMON-REPUBLICAN PRIORITY GOAL #3

COMPLETE A BATHYMETRIC ASSESSMENT EVERY 10 YEARS ON ALL RESERVOIRS IN THE SOLOMON-REPUBLICAN REGION. THIS GOAL WILL BE A TOOL TO PERIODICALLY MONITOR SEDIMENT ACCUMULATION AND RATES. IF SEDIMENT LOADS EXCEED 10%, ACTIONS SHOULD BE INITIATED TO DETERMINE THE SOURCE WATERSHEDS AND REMEDIES WITHIN A TWELVE MONTH PERIOD FROM ASSESSMENT REPORT.

ACTION STEPS

- Work with KBS to complete bathymetric survey of Waconda Reservoir.

SOLOMON-REPUBLICAN PRIORITY GOAL #4

CONTINUE INITIATIVE THAT WILL MAINTAIN, AND ANNUALLY FUND A KANSAS ADMINISTRATIVE TEAM TO FACILITATE REPUBLICAN RIVER COMPACT (RRC) COMPLIANCE BY 2015. AN ANNUAL REPORT OF PROGRESS AND ACTIVITIES SHOULD BE PREPARED AND PRESENTED TO THE REPUBLICAN-SOLOMON REGIONAL ADVISORY COMMITTEE.

ACTION STEPS

- Quarterly presentation by KWO staff on RRC outcomes.

SMOKY HILL-SALINE REGIONAL ADVISORY COMMITTEE ACTION PLANS

SMOKY HILL-SALINE PRIORITY GOAL #1

INCREASE AVAILABLE WATER SUPPLY, WATER SUPPLY STORAGE, AND INTERCONNECTIVITY AMONG PUBLIC WATER SUPPLIES WITHIN THE SMOKY HILL – SALINE PLANNING REGION. METHODS OF ATTAINING GOAL CAN INCLUDE: TEMPORARY OR PERMANENT CONSERVATION POOL RISE AT CEDAR BLUFF RESERVOIR; UTILIZE WILSON RESERVOIR AS A WATER SUPPLY SOURCE FOR THE REGION; PERMANENT CONSERVATION POOL RISE AT KANOPOLIS RESERVOIR; EVALUATE KANOPOLIS RESERVOIR TO DETERMINE THE FEASIBILITY OF DREDGING AND INITIATE PROJECT IF DEEMED VIABLE; CONSTRUCTION OF NEW WATER SUPPLY RESERVOIRS WITHIN REGION; AND PHREATOPHYTE CONTROL WITHIN RIPARIAN AREAS. TIMEFRAME OF IMPLEMENTATION: COMPLETE BY 2060. RESULT OF EFFORTS: ENSURE WATER SUPPLY AVAILABLE FROM RESERVOIR STORAGE EXCEEDS DEMAND BY AT LEAST 10% THROUGH THE YEAR 2060.

ACTION STEPS

- Evaluate recommendations included within the Smoky Hill-Saline section of the KWO Reservoir Roadmap when completed.
- Continue to pursue conservation pool rise efforts at Kanopolis Reservoir.
- Pursue alternative options to V-notch at Kanopolis Reservoir to allow for better control of operations and releases.
- Develop a lake level management plan at Cedar Bluff Reservoir to facilitate temporary pool rises on as needed basis when inflow conditions warrant.
- Evaluate the feasibility of and develop where determined to be most effective low-head dams along the Smoky Hill River above Kanopolis Reservoir to help increase recharge of alluvial aquifer.
- Evaluate the potential to dredge pools within river channel to create pools or basins which help promote recharge of alluvial aquifer.
- Evaluate the potential for utilization of the NRCS PL-566 watershed structure program for structure rehab for water supply purposes.
- Utilize watershed districts within the Smoky Hill-Saline Regional Planning Area and the Kansas Watershed District Act for new construction, operation and maintenance of watershed structures needed to improve for watershed management and water supply purposes.
- Determine the viability of treatment of produced and lower quality water for water supply purposes.
- Utilize additional aquifers (i.e. Dakota, Arbuckle, Cedar Hills) for water supply purposes
- Finish reallocation study of Wilson Reservoir before proceeding forward with any exploration of Wilson as a water supply reservoir.

- Conduct a needs assessment and/or feasibility study for water suppliers within the Smoky Hill-Saline Regional Planning Area to evaluate potential for interconnectivity among systems. This could include an evaluation of systems which have already conducted studies on their own evaluating their individual system's needs and potential for interconnectivity.

- Utilize the Kansas Electronic Watershed Library (KEWL) or a similar program as a data clearinghouse for water supply-related studies completed within the Smoky Hill-Saline Regional Planning Area. This data clearinghouse could be developed for statewide purposes as well.

- Identify GIS, remote sensing, and/or on the ground assessments areas of phreatophyte growth in riparian corridors. Once identified, develop strategy for removal of phreatophytes in riparian areas to help maintain or restore streamflow in targeted regions.

RESPONSIBLE AND OTHER ASSISTING AGENCIES/ORGANIZATIONS

- Kansas Water Office, Kansas Department of Agriculture – Division of Water Resources, Kansas Department of Health and Environment, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, NRCS, SAKW, local watershed districts, regional public water suppliers (including municipal and rural water districts), Kansas Forest Service, county noxious weed programs.

RESOURCES NEEDED

- Funding for needs assessments, feasibility studies, or other assessments associated with action steps noted above. Total funding needed TBD.

TIMEFRAME OF COMPLETION

- During 2017, the Smoky Hill-Saline RAC will evaluate the action steps and develop a prioritized timeline to meet the end goal of ensuring water supply available from reservoir storage exceeds demand by at least 10% through the year 2060.

GEOGRAPHIC SCOPE

- The entire Smoky Hill-Saline Planning Region.

REGULATION/POLICY CHANGES

- TBD

SMOKY HILL-SALINE PRIORITY GOAL #2

DEVELOP A STATEWIDE CONSERVATION EDUCATION PROGRAM/MODEL WHICH IS APPLICABLE TO ALL PUBLIC WATER SUPPLIES WHICH QUANTIFIES WATER CONSERVATION EFFORTS ON CUSTOMER USAGE. DEVELOP A YOUTH-BASED WATER CONSERVATION EDUCATION PROGRAM WHICH IS TIED TO SCHOOL CURRICULUM. PROVIDE PRODUCERS WITH TOOLS AND RESOURCES NEEDED TO MAKE INFORMED MANAGEMENT DECISIONS WHICH IMPROVE WATER USE EFFICIENCY. EDUCATE ALL PLANNING REGION STAKEHOLDERS ON THE BENEFITS OF WATER CONSERVATION, THUS WORKING TOWARDS SUSTAINABLE USE OF THE REGION'S WATER SURFACE AND GROUNDWATER RESOURCES.

ACTION STEPS

- Work with the Statewide Vision Education and Public Outreach Working Group to ensure Smoky Hill-Saline Planning Region stakeholders are educated on the benefits of water conservation, thus working towards sustainable use of the region's water surface and groundwater resources.

RESPONSIBLE AND OTHER ASSISTING AGENCIES/ORGANIZATIONS

- Statewide Vision Education and Public Outreach Working Group implementing agencies and organizations.

RESOURCES NEEDED

- Identified by the Education and Public Outreach Working Group to the Blue Ribbon Funding Task Force.

TIMEFRAME OF COMPLETION

- Throughout Vision implementation period.

GEOGRAPHIC SCOPE

- Statewide with RAC efforts focused within the Smoky Hill-Saline Planning Region.

REGULATION/POLICY CHANGES

- None

SMOKY HILL-SALINE PRIORITY GOAL #3

REDUCE SEDIMENT AND TOTAL SUSPENDED SOLIDS (TSS) CONCENTRATIONS WITHIN THE LAKES AND STREAMS WITHIN THE SMOKY HILL – SALINE PLANNING REGION. METHOD OF ATTAINING GOAL CAN INCLUDE THE CONTINUED SUPPORT OF BEST MANAGEMENT PRACTICE (BMP) IMPLEMENTATION FOR PRACTICES WHICH REDUCE SEDIMENT RUNOFF. FOCUS BMP IMPLEMENTATION WITHIN PRIORITY AREAS IDENTIFIED IN BIG CREEK MIDDLE SMOKY HILL RIVER WATERSHEDS 9 ELEMENT WATERSHED PROTECTION PLAN. TIMEFRAME OF IMPLEMENTATION: COMPLETE BY 2040 - FINAL YEAR OF 9 ELEMENT WATERSHED PROTECTION PLAN IS 2034. RESULT OF EFFORTS: 26% REDUCTION OF TSS CONCENTRATIONS ON THE SMOKY HILL RIVER AT ELLSWORTH AS NOTED WITHIN THE 9 ELEMENT WATERSHED PROTECTION PLAN. REMOVE SEDIMENT-IMPAIRED WATERS FROM THE KDHE TMDL LIST.

ACTION STEPS

- Continued support of locally led and driven efforts, such as the WRAPS program and projects within the region, within watersheds and the BMPs noted for implementation within the 9 Element Watershed Plans.

- Continue to support NRCS programs/initiatives such as RCPP, EQIP, easement programs, WRP, CSTP, etc., which can be utilized to implement sediment-reducing BMPs as well as improve soil health. Identify sources of sediment contributing to TSS/sediment in water bodies (i.e. streambank assessments, etc.).

- Continue to support KDA-DOC programs/initiatives such as the nonpoint source program, watershed program, water resource conservation program and the funding provided to DOC through the State Water Plan Fund.

- BMP implementation above water supply waters to help facilitate settling out of solids before entry into water supply water (i.e. forebays, settling basins).

    - BMP implementation should continue to reduce sedimentation rate of Kanopolis Reservoir as well as other water supply sources.

- Enhance and continue to support information/educational (I&E) efforts focused towards landowners to help reduce sediment runoff on their respective property.

- Include consideration of Wilson Reservoir and the upstream watershed of sediment sources which could impact capacity including bathymetric survey analysis to help quantify current capacity of lake.

- Evaluate sediment and nutrient loading originating from watershed above Herington Reservoir which could impact its viability as a public water supply source. Utilize the June 2008 bathymetric surveys on Herington Reservoir and Herington City Lake as baseline characterization of current capacity lost in lakes due to sedimentation.

RESPONSIBLE AGENCIES/ORGANIZATIONS

- Kansas Water Office, Kansas Department of Health and Environment (including WRAPS Program), Kansas Department of Agriculture – Division of Conservation, Kansas Department of Wildlife, Parks & Tourism, Kansas Corporation Commission, Kansas Biological Survey (KBS), Kansas State University.

OTHER ASSISTING AGENCIES/ORGANIZATIONS

- Local conservation districts, county governments, municipalities, U.S. Army Corps of Engineers, K-State Research & Extension, Kansas Forest Service, Kansas Association for Conservation & Environmental Education (KACEE), Federal Emergency Management Agency (FEMA), Natural Resource Conservation Service (NRCS), Environmental Protection Agency (EPA), Kansas Rural Center (KRC), U.S. Fish & Wildlife Service (USFWS), U.S. Bureau of Reclamation, local industry/commerce, Kansas Rural Water Association (KRWA), local watershed districts, colleges/universities, Quail Forever, Pheasants Forever, Kansas Alliance for Wetlands & Streams (KAWS), other local groups.

RESOURCES NEEDED

- WRAPS program to provide coordination of efforts among other agency/organizations needed.

- Planners/designers and implementers for BMPs to be implemented for specific projects (i.e. streambank stabilization projects.).

- Cost estimates to fully implement WRAPS 9 Element watershed plans within Smoky Hill-Saline Planning Region is approximately **$1.56 million annually**.

    - Additional costs outside of this annual cost would be expected as well.

TIMEFRAME OF COMPLETION

- Actions to be completed by 2040

GEOGRAPHIC SCOPE

- WRAPS project areas within Smoky Hill-Saline Planning Region
- Saline drainage above Wilson Reservoir
    - More assessment information needed in this area to characterize BMP needs.

REGULATION/POLICY CHANGES

- Continue to oppose current Waters of the United States (WOTUS) efforts.
- Streamline process and provide latitude to acquire necessary permits for streambank stabilization or other BMPs to reduce/remove additional requirements and costs.

SMOKY HILL-SALINE PRIORITY GOAL #4

INCREASE PUBLIC WATER SUPPLY WATER USE EFFICIENCY FOR SUPPLIERS WITHIN THE REGION. METHOD OF ATTAINING GOAL CAN INCLUDE THE PROMOTION OF DEVELOPMENT OF NEW OR UPDATED WATER CONSERVATION PROGRAM PLANS FOR PUBLIC WATER SUPPLIES WITHIN THE SMOKY HILL – SALINE PLANNING REGION. IMPLEMENTATION OF CONSERVATION MEASURES WHICH LEAD TO ALL PUBLIC WATER SUPPLIES IN THE SMOKY HILL – SALINE PLANNING REGION OPERATING IN THE BOTTOM 1/3RD OF GALLONS PER CAPITA PER DAY (GPCD) WHEN COMPARED TO OTHER PUBLIC WATER SUPPLIES WITHIN RESPECTIVE REGIONS USED FOR GPCD COMPARISON. TIMEFRAME OF IMPLEMENTATION: COMPLETE BY 2040. THE RESULTS OF THE EFFORTS WILL BE OBTAINING THE SAME OR INCREASED OUTPUTS WITHIN PARTICIPATING MUNICIPALITIES WHILE UTILIZING THE SAME OR LESS AMOUNTS OF WATER.

ACTION STEPS

- All public water supplies follow the 2007 Kansas Municipal Water Guidelines and have a recently updated conservation plan.
- Public water supplies evaluate the feasibility of water conservation rates.
- Public water supplies develop and promote rebate programs geared towards water conservation efforts.
- Develop a “tool box” of educational information PWSs could utilize to pass information along to customers.
- Work through the framework of existing statewide education efforts to:
    - Develop region-wide outreach campaign promoting water conservation efforts.
- Report GPCD values on an annual basis at RAC meetings

- Develop an independent technical task force to help large water users within public water supply systems to improve water use efficiency.

- Hold annual public water supply "field days" to share current water conservation efforts.

    - Make sure media is involved with promotion of these events.

RESPONSIBLE AND OTHER ASSISTING AGENCIES/ORGANIZATIONS

- Public water suppliers within Region, Kansas Water Office, Kansas Department of Agriculture – Division of Water Resources, Kansas Rural Water Association, Kansas Municipal Utilities

RESOURCES NEEDED

- Technical and financial resources for region-wide outreach campaign and independent technical task force.

TIMEFRAME OF COMPLETION

- Completed by 2040

GEOGRAPHIC SCOPE

- Entire Smoky Hill-Saline Planning Region

REGULATION/POLICY CHANGES

- None noted.

UPPER ARKANSAS REGIONAL ADVISORY COMMITTEE ACTION PLANS

UPPER ARKANSAS PRIORITY GOAL #1

EXTEND THE USABLE LIFETIME OF THE OGALLALA AQUIFER FOR AT LEAST 25 YEARS IN THE PLANNING REGION THROUGH THE PROMOTION OF MULTIPLE LOCAL ENHANCED MANAGEMENT AREAS (LEMAS), WATER CONSERVATION AREAS (WCAS) AND OTHER INCENTIVE-BASED PROGRAMS. SLOW THE DEPLETION OF THE OGALLALA AQUIFER BY 25% IN 10 YEARS IN THE PLANNING REGION MAXIMIZING THE OPPORTUNITY TO MAKE USE OF EMERGING TECHNOLOGIES. ENCOURAGE CONSERVATION THROUGH ADDED FLEXIBILITY. FIND ADDITIONAL SOURCES OF WATER AND A PLACE TO STORE WATER FOR IRRIGATION AND RECHARGE. INCREASE THE OPPORTUNITY TO USE WASTEWATER FOR OTHER BENEFICIAL USES. INCREASE EDUCATION OF AQUIFER CONDITIONS.

ACTION STEPS

- The depletion rate of the Ogallala Aquifer is based on the previous 15 years of data, 2000-2015. Usable life of the Aquifer is defined as 400 gpm well.

- Gather data to quantify the reduction in water use needed to reduce the depletion rate by at least 25% in 10 years and extend the life of the Ogallala in the region for at least 25 years. Use data to determine problem areas for focusing efforts.

- Gather data and disseminate information to water users in declining areas on soil/ water quality compatibility, water saving farming practices and Mobile Drip Irrigation (MDI) efficiencies.

- Focus on irrigation conservation (as largest user)
  - Encourage adoption of water conservation tools, Local Enhanced Management Areas (LEMAs), Water Conservation Areas (WCAs), technologies, crops and programs to reduce water use (new and improved programs).

  - Provide tools and assistance for WCA development and adoption.

  - Reduce inefficiencies in water use through proven technologies and best management practices, i.e., re-nozzle, technology advances and conservation programs.

  - Provide incentives to reduce pumping rates, reduce usage.

  - Support water technology farms as research and education tools for water use efficiency.

  - Define appropriate water needed to raise crop economically based on soil type and irrigation water compatibility.

  - Evaluate data on MDI for EQIP eligibility

  - Provide producers with information on water saving farming practices that add value to that farm.

  - Improve conservation programs such as CREP, and develop others to allow conversions to alternate crops or irrigation systems and remove county acreage caps.

- Maximize available water and promote conservation of municipal use through incentives, reduced water loss, and increased data availability to reduce gallons per capita per day usage. (Goal #3)

- Maximize available water and promote conservation of industrial use through incentives, benchmarking efforts, and increased data availability to reduce gallons per production unit usage. (Goal #4)

- Target conservation efforts along Arkansas River in Finney, Gray and Ford counties to aid in re-establishment of stream flow (Goal #2)

- Utilize 50-Year Water Vison Education Plan and other means to educate water users to adopt water saving technologies and management techniques, develop LEMAS, WCAs, understand water appropriation laws, and aquifer conditions. Provide decision makers with appropriate information.

- Develop alterative water supplies (capture runoff and high flows, reuse and recharge).

- Support research on water conservation and innovative, value-added concepts to offset economic loss.

- Support funding to provide water conservation actions and education.

- Support the exploration and investigation of surface water transportation for Kansas.

- Educate water users recognizing there are costs to individuals beyond program funds to reduce water use.

UPPER ARKANSAS PRIORITY GOAL #2

BY 2020, CONTINUE TO RE-ESTABLISH AND MAINTAIN FLOWS ALONG THE UPPER ARKANSAS RIVER IN THE AMOUNT OF ONE CUBIC FEET PER SECOND AT THE USGS GAGE LOCATED AT DODGE CITY FOR 100% OF KANSAS' SHARE OF COMPACT WATER AND A QUANTIFIED SHARE OF HIGH FLOWS THAT IS CURRENTLY STORED IN COLORADO THAT IS OVER AND ABOVE THE COMPACT AMOUNT THROUGH MANAGEMENT OF RIVER FLOWS AND MAINTENANCE OF OPEN CHANNEL CONVEYANCE THROUGH 100% OF TAMARISK CONTROL. ENSURE WE MAINTAIN COMPACT COMPLIANCE AND ENFORCE THE COMPACT WHEN NECESSARY.

ACTION STEPS

- Target water conservation efforts along Arkansas River in Finney, Gray and Ford counties to aid in re-establishment of stream flow.

- Support efforts to eradicate tamarisk along the river channel. (May include future RCPP, KFS grant or other efforts.)

- Support off-river storage of high river flows (may need water management rule changes and/or development of additional storage).

- Ensure state resources are maintained to monitor and enforce compact compliance.

UPPER ARKANSAS PRIORITY GOAL #3

MAXIMIZE AVAILABLE WATER AND PROMOTE CONSERVATION OF MUNICIPAL USE THROUGH INCENTIVES, EDUCATION AND OUTREACH, REDUCED WATER LOSS, AND INCREASED DATA AVAILABILITY TO REDUCE GALLONS PER CAPITA PER DAY USAGE.

ACTION STEPS

- Utilize 50-Year Water Vision Education Plan and other means to educate water users to adopt water saving technologies and management techniques.

- Encourage all public water suppliers to have an approved water conservation plan and use it.

- Encourage and support public water suppliers to investigate reuse and conservation projects.

- KWO and its partner agencies and organizations will develop BMPs for municipal projects which promote reuse and conservation of water. These projects should be shared through events such as the annual Governor's Water Conference.

UPPER ARKANSAS PRIORITY GOAL #4

MAXIMIZE AVAILABLE WATER AND PROMOTE CONSERVATION OF INDUSTRIAL USE THROUGH INCENTIVES, EDUCATION AND OUTREACH, BENCHMARKING EFFORTS, AND INCREASED DATA AVAILABILITY TO REDUCE GALLONS PER PRODUCTION UNIT USAGE.

ACTION STEPS

- Utilize 50-Year Water Vision Education Plan and other means to educate water users to adopt water saving technologies and management techniques.
- Encourage all industrial water users to have an approved water conservation plan and use it.
- Objective to lower the consumption per unit production at the facilities normal or maximum production point.
- Incentivize industrial investments in water efficiency savings, such as a percentage tax break for a fixed period based on the relative "size" of the financial investment. Incentives should be directly proportional to demonstrated water savings and reductions.
- Recognize and promote the relationship between industry and the agricultural economy and the fundamental reliance on water.

UPPER REPUBLICAN REGIONAL ADVISORY COMMITTEE ACTION PLANS

UPPER REPUBLICAN PRIORITY GOAL #1

DEVELOP AND ADOPT A WATER CONSERVATION MANAGEMENT PLAN THAT PROVIDES MAXIMUM FLEXIBILITY WHILE REDUCING OVERALL ACTUAL USE, IN CONCERT WITH GMD 4, TO EXTEND THE AQUIFER LIFE AND ECONOMIC WELL-BEING BY JANUARY 1, 2017. UTILIZE A TIME-PHASED IMPLEMENTATION APPROACH, NOT LESS THAN 2 YEARS OR GREATER THAN 5 YEARS, TO PHASE IN CONSERVATION MEASURES TO LESSEN ECONOMIC IMPACTS AND ALLOW USER TRANSITION. CONSERVATION PLAN SHALL ADDRESS ALL TYPES OF USE WHILE CONSIDERING FLEXIBILITY TOOLS AND OVERALL ACTUAL REDUCTION.

ACTION STEPS

- Support GMD No. 4 in continuation of district wide LEMA plan.
- Look outside the box for other possible funding sources necessary to improve water efficiency.

UPPER REPUBLICAN PRIORITY GOAL #2

ENHANCE CURRENT EFFORTS ON EDUCATION OF ALL WATER USERS FOR ALL AGE GROUPS ON SOURCES OF SUPPLY, QUANTITY OF SUPPLY, BEST MANAGEMENT PRACTICES, ETC. TO HELP STAKEHOLDERS CONSERVE AND EXTEND.

ACTION STEPS

- Work with KDA and GMD No. 4 in education of water technology farms, specifically in creating a water technology farm with the Northwest Kansas Technical College's Precision Agriculture program.
- Support KDA in education of WCAs.
- Work with NRCS to evaluate effectiveness of RCPP program and find efficiencies.
- Create a fall event for education of water conservation, involve water agencies and schools.

UPPER REPUBLICAN PRIORITY GOAL #3

REPUBLICAN RIVER COMPACT ADMINISTRATION SHOULD BE ENCOURAGED TO MAINTAIN COMPLIANCE IN THE SOUTH FORK REPUBLICAN RIVER.

ACTION STEPS

- Ensure KDA continually updates the RAC on the Republican River Compact, especially if any changes occur within the area.

UPPER REPUBLICAN PRIORITY GOAL #4

INCREASE UTILIZATION AND ADOPTION OF WATER CONSERVATION TECHNOLOGY AND PRACTICES BY 10% BY 2020. ACTIVELY SEEK ANNUAL FUNDING TO ENSURE SUCCESSFUL ACHIEVEMENT OF GOAL

ACTION STEPS

- Promote conservation through possible incentives and increased data availability.

UPPER REPUBLICAN PRIORITY GOAL #5

ENCOURAGE THE STATE TO COORDINATE WITH THE USDA RISK MANAGEMENT AGENCY (RMA), AS WELL AS OUR CONGRESSIONAL DELEGATION AND NEIGHBORING STATES, TO DEVELOP COMMON SENSE TOOLS FOR CROP INSURANCE THAT ENCOURAGE WATER CONSERVATION AND HAVE SUCH TOOLS AND POLICIES AVAILABLE BY 2017.

UPPER SMOKY-HILL REGIONAL ADVISORY COMMITTEE ACTION PLANS

UPPER SMOKY HILL PRIORITY GOAL #1

BY 2025, REDUCE IRRIGATION USE BY 25% BASED ON RECENT AVERAGE PUMPING HISTORY PER WATER RIGHT. ALLOW WATER RIGHT TRANSFERS AND OTHER FLEXIBILITIES AS LONG AS A NET REDUCTION IS ACHIEVED. IN ADDITION, ANNUAL WATER USE FOR ALL IRRIGATION USERS WILL NOT EXCEED NET IRRIGATION REQUIREMENT FOR THAT COUNTY.

ACTION STEPS

- Support GMD No. 1 in formulating another LEMA plan.
- Work with KDA and GMD No. 1 in education of water technology farms
- Support KDA in education of WCAs

UPPER SMOKY HILL PRIORITY GOAL #2

DEVELOP A WATER REDUCTION PLAN AND BEGIN IMPLEMENTATION BY JANUARY 2017. SHORT TERM: REDUCE THE RATE OF DEPLETION OF THE AQUIFER WITHIN FIVE YEARS TO SUSTAIN THE ECONOMY, BUT BEGIN IMPLEMENTATION OF CONSERVATION IMMEDIATELY. LONG TERM: BY EVALUATING SUCCESS EVERY FIVE YEARS, DETERMINE IF CONSERVATION MEASURES ARE ACHIEVING A REDUCED RATE OF DEPLETION. (RATIONALE: WITHIN EACH FIVE YEAR EVALUATION PERIOD NEW TECHNOLOGIES AND CROP VARIETIES AS WELL AS ADDITIONAL SOURCES OF SUPPLY WILL BE MORE AND MORE AVAILABLE.)

ACTION STEPS

- Work with NRCS to evaluate effectiveness of RCPP program and find efficiencies.
- Work with GMD No. 1 in creating a quarterly newsletter to members; include updates from within district and involving water agencies.
- Create a fall event for education of water conservation, involve water agencies and schools.
- Promote conservation through possible incentives and increased data availability.

UPPER SMOKY HILL PRIORITY GOAL #3

ALL MUNICIPAL USERS WITHIN THE PLANNING REGION WILL BE AT OR BELOW THE REGIONAL 2015 AVERAGE GALLONS PER CAPITA PER DAY (GPCD) WITHIN THE NEXT FIVE YEARS. ALL MUNICIPAL USERS AS DEFINED BY THE KANSAS WATER APPROPRIATION ACT IN PLANNING AREA WILL FOLLOW BEST MANAGEMENT PRACTICES AND IMPLEMENT A CONSERVATION PLAN.

ACTION STEPS

- Review municipal rate structures.
- Review Scott City's education tools to see if their plan can work in nearby cities.
- Promote conservation through possible incentives and increased data availability.

UPPER SMOKY HILL PRIORITY GOAL #4

MAXIMUM WATER USE PER HEAD WILL BE MAINTAINED AS DEFINED BY THE KANSAS WATER APPROPRIATION ACT. STOCKWATER ALLOCATIONS AS DEFINED BY KANSAS WATER APPROPRIATION ACT WILL IMPLEMENT BEST MANAGEMENT PRACTICES AND BE AS EFFICIENT AS POSSIBLE. MEASURE THE IMPLEMENTATION OF THIS GOAL BY A 15% INCREASE IN THE ADOPTION OF MANAGEMENT PRACTICE PLANS (OVERFLOW REUSE, ETC.) WITHIN THE NEXT FIVE YEARS.

ACTION STEPS

- Research feasibility of reuse options for livestock watering.
- Promote and implement dairy and feedlot Best Management Practices

UPPER SMOKY HILL PRIORITY GOAL #5

INDUSTRIAL USERS AND ALL OTHER BENEFICIAL USES OF WATER WILL DEVELOP BEST MANAGEMENT PRACTICE PLANS TO BE AS EFFICIENT AS POSSIBLE. BY 2020, ALL INDUSTRIAL USERS WILL HAVE A BEST MANAGEMENT PRACTICE PLAN AND THE ADOPTION OF PRACTICES WILL INCREASE BY 15%.

ACTION STEPS

- Promote and implement Best Management Practices for industrial users.

VERDIGRIS REGIONAL ADVISORY COMMITTEE ACTION PLANS

VERDIGRIS PRIORITY GOAL #1

IN ORDER TO MANAGE THE WATER STORAGE CAPACITY IN OUR REGION, EVALUATE DIFFERENT PROCESSES OF MANAGING OUR RESERVOIRS BY 2020. THEN USING BEST MANAGEMENT PRACTICES, INCLUDING CONSIDERATION OF COST/BENEFIT OF THE PRACTICES: INCREASE WATER STORAGE CAPACITY BY 10% EVERY 10 YEARS WITH PRIORITY GIVEN TO EXISTING STRUCTURES, AND ENSURE WATER SUPPLY AVAILABLE FROM STORAGE EXCEEDS PROJECTED DEMAND BY AT LEAST 10% THROUGH THE YEAR 2050.

ACTION STEPS

- The Kansas Water Office will evaluate the feasibility of reservoir operation changes and water storage increases and estimate costs of these. A feasibility report will be drafted no later than 2020, which will

include input from all affected entities (and will focus on Fall River Reservoir as a priority for reallocation and ensuring the supply exceeds demand beyond 2036). Based on the outcome of the feasibility report, changes to operations will be implemented and the process of reallocation studies may be initiated.

VERDIGRIS PRIORITY GOAL #3

BY 2020 EVALUATE POTENTIAL SITES AND THE COSTS AND BENEFITS OF BUILDING NEW RESERVOIRS WITHIN THE VERDIGRIS REGION TO MEET FUTURE DEMANDS. PERMITTING AGENCIES SHOULD STREAMLINE PROCESSES TO SPEED APPROVAL OF SMALL PONDS AND RESERVOIRS.

ACTION STEPS

- In order to evaluate potential sites, a review the Reservoir Roadmap for the Verdigris Region will be conducted by the Kansas Water Office. After review of the Reservoir Roadmap additional work will be conducted by the Kansas Water Office to highlight areas of demand in the region and provide additional information on reservoir siting not covered in the Roadmap. A report will be created with this information, as well as cost benefit analysis of building new reservoirs. This report will be completed no later than 2020. In addition to this report the Kansas Water Office will review the PL-566 program in reference to dam rehabilitation and water supply addition. A committee will also need to be created involving those working with the permitting of reservoirs, including, but not limited, to SAKW, USACE, DOC, DWR, WRAPS, NRCS, and KWO. This committee will review mitigation guidelines and rehabilitation possibilities.

BLUE RIBBON FUNDING TASK FORCE FOR WATER RESOURCE MANAGEMENT

Final Report to Governor Sam Brownback

January 11, 2017

Blue Ribbon Funding Task Force for Water Resource Management
Report to Governor Sam Brownback

Introduction

The *Long Term Vision for the Future of Water Supply in Kansas*, published January, 2015, identified a Blue Ribbon Funding Task Force (Task Force) as a critical, immediate action item. The Task Force was charged with developing a balanced, affordable and sustainable method to provide financing for water resource management and protection, including alternatives that utilize public and private partnerships. Keeping in line with the Phase I Action Items, the Task Force was formed in the first year of implementation of the Vision. Members were appointed in November, 2015.

Executive Summary

The Task Force met seven times during 2016 to evaluate overall financial needs to implement the *Long Term Vision for the Future of Water Supply in Kansas*, current revenue sources and alternatives, and develop a recommendation to present to the Governor and 2017 Legislature.

The Task Force came to the consensus that roughly $55 million in annual funding is needed for full implementation of the Vision. Actual project expenditures will vary from year to year in response to changing priorities and accomplishments. The Kansas Water Authority (KWA) remains the appropriate entity to make budgetary recommendations, in concert with the Governor's Water Resources Sub-Cabinet, on priority projects and programs.

To ensure an adequate revenue stream to support the funding needs, the Blue Ribbon Funding Task Force recommends the following:

- Existing fees into the State Water Plan Fund (SWPF) be maintained at current levels,
- One-tenth of one percent of the existing statewide sales tax be dedicated to funding Vision implementation,
- It is preferable that the dedication of the one-tenth of one percent sales tax be protected for this purpose by constitutional amendment and subject to referendum every 10 years,
- A review of all existing user fees by the legislature five years after successful collection of the state sales tax, to continue every 5 years thereafter,
- That the State General Fund & Economic Development Initiatives Fund statutory demand transfers be provided to the SWPF by the legislature during the 2017 session for the FY2018 and 2019 budgets, or until the proposed sales tax revenue is successfully collected, and
- The Legislature and the KWA look at the statute relative to the makeup of the KWA, and seek to include demographic and user fee participation as guidelines for representation and appointments.

Membership

Throughout the Vision process, it was emphasized that Kansas is a diverse state with many unique issues facing water users in different regions. Thus, the Vision embodies the flexibility to craft solutions unique to local regions and beneficial to all types of users. Therefore, membership of the Task Force was equally diverse, incorporating state-wide organizations, legislators, and agency officials. Tracy Streeter, Director of the Kansas Water Office (KWO) and Ex-Officio Member, was selected by the Task Force to serve as Chair.

Organizations

Randall Allen, Executive Director, Kansas Association of Counties
John Bridson, Vice-President of Generation, Westar Energy
Colin Hansen, Executive Director, Kansas Municipal Utilities
Gary Harshberger, Chairman, Kansas Water Authority
Terry Holdren, Chief Executive Officer, Kansas Farm Bureau
Karma Mason, Member, Kansas Chamber & Kansas Water Authority
Erik Sartorius, Executive Director, League of Kansas Municipalities
Dennis Schwartz, Director, Kansas Rural Water Association & Kansas Water Authority
Matt Teagarden, Chief Executive Officer, Kansas Livestock Association
Tom Tunnell, President and CEO, Kansas Grain and Feed Association

State Legislators

Senator Jim Denning, Overland Park
Senator Tom Hawk, Manhattan
Senator Larry Powell, Garden City
Representative Jerry Henry, Atchison
Representative Steven Johnson, Assaria
Representative Sharon Schwartz, Washington

Ex-Officio Agency Members

Robin Jennison, Secretary of Wildlife, Parks & Tourism
Jackie McClaskey, Secretary of Agriculture
Susan Mosier, Secretary of Health and Environment
Tracy Streeter, Director, Kansas Water Office

Meetings

The Task Force met seven times beginning in January, 2016. A brief synopsis of each meeting is below.

January 29, 2016

The Task Force was charged with their duties and introductions were made. A Vision update was provided with all current and future action items presented. Task Force members also received a background presentation on the State Water Plan Fund (SWPF), which was created in 1989 as a balanced effort in municipal and industrial fees, agricultural fees and statewide support through the State General Fund (SGF) and Economic Development Initiatives Fund (EDIF). To show current revenue sources geographically, maps were provided which showed fee breakdown by county. Also included in the discussion was the history of the Water Marketing Fund and the relationship with the U.S. Army Corps of Engineers in terms of reservoir storage, and the evolution into the Water Assurance Program to ensure water supply for customers in times of drought. The final piece of background information shared with the Task Force was a presentation on how other states fund their water programs. These included fees, sales tax, energy and natural resource royalties, and state general fund support. From this discussion, members wanted additional information on what one-tenth of one percent of sales tax would generate in Kansas.

March 18, 2016

The majority of this meeting was spent discussing the known funding demands of the Vision and the SWPF. The KWO presented the Vision as action items with cost estimates to estimate the level of funding needed to support the long-term plan. The estimated cost presented was $45.9 million. This did not include any costs for the Education and Outreach goals and action items as designated in the Vision, and it was anticipated there would be more costs identified at the next meeting during the public input session. Agencies also presented their expense and revenue tables for current funding levels from all sources. At this meeting, an irrigation use fee was first discussed as a revenue option for future discussion.

April 19, 2016

This meeting was dedicated to receiving public input from interested individuals and organizations on what should be funded to implement the Vision. Twenty-two individuals and organizations presented oral testimony at the meeting and answered questions from the Task Force. Additionally, 10 individuals and organizations submitted written testimony for consideration by the Task Force. The presentations were organized according to the Vision document, using the following categories: Funding for the Vision for Future Water Supply in Kansas; Water Conservation and Management; Technology and Crop Varieties; Additional Sources of Supply; and Education. Presenters were asked to not only include projects and priorities for consideration of the Task Force, but also include funding requests or known demands and costs. Presenters identified an additional $6.5 million needed in addition to items presented at the March meeting. The Task Force also received information from the KWO on the history of the SGF and EDIF transfers to the SWPF.

June 16, 2016

At the June meeting, Task Force members were presented with an updated revenue target number of $56,550,000 based on public input and inclusion of costs associated with implementation of a comprehensive education and public outreach effort.

The Task Force was also presented with an interactive spreadsheet of revenue options for consideration. These options included within the spreadsheet included:

- existing fees with options to increase or decrease them,
- an irrigation water use fee,
- an assessment on electric generation and/or residential electric use state-wide,
- a bottled water fee, and
- a state-wide sales tax.

At the conclusion of this meeting, the Task Force option to continue for discussion was:

- Increase municipal, industrial, stockwater and clean drinking water fees from 3 cents per 1,000 gallons to 10 cents per thousand gallons,
- Decrease fertilizer fee going to the SWPF from $1.40 per ton to $0.70 per ton,
- Reduce pesticide registration fee going to SWPF from $100 per label to $50 per label,
- Eliminate the sand royalty fee,
- Institute an irrigation use fee of ½ cent per 1,000 gallons used, and
- Institute a bottled water fee of 4 cents per bottle.

This proposal would generate approximately $54 million and is detailed in the "Alternatives Considered" section of this report.

August 4, 2016

During the August meeting, KWO presented background information and findings related to the implementation of a bottled water fee as discussed at the June meeting. The information shared is listed in the Appendix of this report. After discussion, the Task Force decided to not pursue the implementation of the bottled water fee due to logistical issues, equity issues, and uncertainty related to assessment capabilities. The rest of the meeting discussion related to the draft proposal presented at the June meeting. Several municipalities and Groundwater Management Districts (GMDs) were present at the meeting and shared thoughts and perspectives related to the fee increases. Of particular interest to many were the introduction of the irrigation water use fee and the significance of the increase in the existing fees. The Task Force also began consideration of ways to protect additional funding that is generated including by adoption of a constitutional amendment. Final discussion items included the need to look at representation on the Kansas Water Authority (KWA) in terms of fee payers to the SWPF.

The Task Force suggested evaluating:

- Increasing municipal, industrial, stockwater and clean drinking water fees from 3 cents per 1,000 gallons to 4 cents per thousand gallons,
- Maintaining the fertilizer, pesticide registration and sand royalty fees at current levels, and
- Instituting a 1/10 of 1% retail sales tax.

This option would generate roughly $58 million per year.

September 19, 2016

The Task Force discussed feedback that had been received since the last meeting including additional comments in opposition to the irrigation water use fee. Maps showing fee revenue generated in the 14 water planning regions of the state were provided to the Task Force. Discussion occurred regarding the option or necessity of dedicating funding back to the region in which it is generated. Local Regional Advisory Committees' work to develop regional goals and action plans was noted, as was the need for continued local oversight of projects.

The meeting concluded with an option of maintaining all existing fees at the current level with dedication of 1/10 of 1% of the existing retail sales tax to Vision implementation.

October 31, 2016

The meeting began with a review of the decisions reached at the previous meeting in terms of a funding proposal. Feedback was received on the proposal from the Kansas Farm Bureau and the Kansas Livestock Association, and a discussion ensued on the implementation of new fees, continuation of existing fees, as well as possible sunset provisions for existing fees should a new revenue source be identified. Dr. Kenneth Kriz from Wichita State University also presented his research into the geographical origin of existing SWPF revenue, and expected sources of future revenue and expenditures by region. The Task Force asked for additional information from Dr. Kriz on where future expenditures may be targeted or distributed. The Task Force then entered deliberations on the funding proposal drafted at the September meeting and took action to present a final proposal. This deliberation and decision is detailed in the "Recommendation" section of this report, and the full minutes of the October 31, 2016 meeting are presented in the appendix.

Public Input

The April 19th meeting of the Blue Ribbon Funding Task Force for Water Resource Management was chaired by Tracy Streeter, Director, Kansas Water Office. Testimony was received on existing funding needs, future needs, and possible revenue sources in five subject areas; Funding, Water Conservation and Management, Technology and Crop Variety, Additional Sources of Supply, and Education. All testimony is available to the public and is posted on the Kansas Water Office website at www.kwo.org.

Funding

Testimony was received by Brad Loveless (Kansas Alliance for Wetlands and Streams), Leslie Kaufman (Kansas Cooperative Council), Nick Guetterman (Kansas Farm Bureau), Darci Meese (WaterOne), Randy Stookey (Kansas Ag Retailers Association), and Allyn Lockner (Self).

Questions and discussion from the Task Force included the following:

- On the fertilizer tonnage fee proposed by the Kansas Ag Retailers Association in their testimony, that it would require a change in statute.
- Mr. Lockner further discussed his proposal to recruit Kansans through an entity such as the Kansas Volunteer Commission to do work to improve water quality and complete water projects.
- Mr. Loveless discussed that user fees must come from a variety of sources, included the recreational users and irrigation users to benefit conservation. There are many programs in place, but they are underfunded.
- Mr. Guetterman expanded on his testimony regarding the landlord/tenant relationship, stating that there is a need for education and awareness on the importance of conservation practices. Cost-share programs as they exist now have problems, such as they are over too long of time period, to make it worthwhile. Programs are also outdated and need to look at new research in order to be more effective.
- Ms. Meese discussed the possible ways Regional Advisory Committees could be used as stakeholder groups to help establish fees and funding needs.

Water Conservation and Management

Testimony was received from Gary Satter (Glacial Hills RC&D), Cleve Reasoner (Wolf Creek Nuclear Operating Corporation), Tom Huntzinger (Upper Wakarusa Watershed), Rob Manes (Nature Conservancy), Jared "Pete" Gile (Kansas Bostwick Irrigation District), and Ed Hockenberg (Perry Yacht Club).

Questions and discussion from the Task Force included the following:

- Mr. Reasoner expanded on the increase in water fees Wolf Creek will pay in the upcoming year.
- Mr. Hockenberg discussed lake level management at Perry. He said that his members may be open to contributing their "fair share" to helping secure storage at the reservoir.
- The Task Force asked about a prioritization of efforts, or any barriers to get things done. The group discussed that you cannot prioritize activities such as dredging over streambank stabilization, because the solution will be a mixture of many strategies. Mr. Satter cited the WRAPS system, which has a built-in priority mechanism, and also agreed that wetland forebays are a priority.
- Mr. Gile said that a barrier is the size of some projects and the inability to secure funds for cost-share programs.

- The group of presenters agreed that it is always more efficient to prevent problems than remediate them later.
- Mr. Huntzinger expanded on wetland forebays, explaining they are storm run-off retention structures to control inlets and outlets. Stream run-off goes into the wetland to settle sediment, rather than going into the reservoir.
- The Task Force asked if stakeholders would be more agreeable to fees if money is targeted to specific projects. The reaction was mixed. While the politics of funding will always be important, they felt stakeholders would like to see where the need is, and where you can get the most "bang for the buck." It was noted that all WRAPS funding is already targeted, as are streambank projects.

Technology and Crop Variety

Testimony was received from Greg Krissick (Kansas Corn Growers), Fred Jones (City of Garden City), Kent Winter (Kansas Grain Sorghum Producers Association), and Tom Willis (T&O Farms and Water Technology Farm Sponsor).

Questions and discussion from the Task Force included the following:

- The task force was interested in water rates in Garden City. Mr. Jones explained that current re-use is part of the current power purchase agreement. For future re-use, a rate specific to industry would be developed, but would still be lower than potable rates to encourage use. The City is looking to a recharge project in the future. While they have not proposed a direct potable reuse, they are currently setting up the framework to have the discussion in the future.
- In terms of the future use of sorghum as a crop, Mr. Winter stated that there is growth, as China has now entered the sorghum market, increasing the human food potential. There are also many advances being made in processing techniques.
- Questions were asked about the Water Technology Farm Mr. Willis is involved with. Mr. Willis discussed his hypothesis that you can control the aquifer levels on your farm. He hopes that through further testing and example, it will be determined that these technologies are applicable and worth the investment. The Water Technology Farm will also test sorghum.

Additional Sources of Supply

Testimony was received from Mark Rude (Southwest Groundwater Management District No. 3), Howard Neibling (University of Idaho), Hi Lewis, and Duane Hund (Watershed Districts).

Questions and discussion from the Task Force included the following:

- Could Kansas implement some of the same technologies to re-use oil and gas water as they do in Oklahoma? It is possible, according to those present.

Education

Testimony was received from Dana Ladner (KDA, Education and Outreach Working Group) and Jared Bixby (KACEE).

Questions and discussion from the Task Force included the following:

- Are other states being talked to or used as an example in education efforts? Ms. Ladner said the Education and Outreach Coordinating Team had reached out to Texas and Colorado. Texas uses an outside marketing firm for their education efforts, and Colorado uses in-house resources.

- The Task Force asked about the general importance of education and how it could affect the outcome of water Vision efforts. Those testifying discussed how the current fragmented message makes it hard to determine current outcomes, but that a consistent message could lead to much greater awareness across the state.

Alternatives Considered

The first funding proposal (Proposal A) considered and put forth for feedback was deliberated at the June meeting. Proposal A raised $54.2 million in revenue from existing fee sources, additional fees, and a bottled water fee. Municipal fees, industrial fees, stockwater fees, and the Clean Drinking Water Fee Fund (CDWFF) were each raised from the current $.03/1000 gallons to $.10/1000 gallons. An irrigation use fee of $.05/1000 gallons was also implemented. Fertilizer fees were decreased from $1.40/ton to $.70/ton and pesticide fees were decreased from $100/license to $50/license. Sand royalty fees were eliminated. The bottled water fee was proposed at $.04/bottle of water sold in Kansas. The largest single revenue contributor was the bottled water fee, raising $19.9 million.

Proposal A raised adequate revenue, but public feedback provided and comments from Task Force members ultimately raised questions regarding the fee increases, as well as the addition of the irrigation fee. GMDs and other western irrigators believed this resulted in a double fee on irrigators, as they are assessed at a greater amount in property tax for irrigated land. The Kansas Livestock Association also expressed concern that the increase in the stockwater fee would be passed on to a small number of producers, resulting in an unfair burden on few fee payers. The bottled water fee also proved to be problematic. In consultation with the Kansas Department of Revenue, the bottled water fee was found less attractive by the Task Force due to the question of where to collect the fee. A fee at the point of sale would be logistically difficult to implement, while a fee on the wholesale quantity would be disproportionally large on Kansas bottlers.

Municipalities and public water suppliers expressed concern at the increase in fees on residential water customers. Any fee increase is generally met with questions and objection, no matter how large or small. This was a similar concern with a residential electric fee, even if it was assessed statewide. Task Force members discussed ways to communicate the need for the increases with customers if there was a desire to continue with Proposal A.

Regional Advisory Committees throughout the State expressed a desire for portions of the funds raised be distributed directly back to the regions that generate the funds. The Task Force discussed this concept on multiple occasions and decided to defer this to the Kansas Water Authority for further development and consideration.

Recommendation

At the October 31, 2016 meeting, Task Force members took action to approve a recommendation to the Governor and the Legislature during the 2017 legislative session.

The Task Force came to the consensus that the number of roughly $55 million in total for the SWPF is appropriate. This allows flexibility for large expenditures, such as purchase of storage at reservoirs, while allowing the KWA to act as the entity to prioritize projects and Vision-related funding items.

The Task Force approved a proposal that allows one-tenth of one percent of existing state-wide sales tax to be marked for the SWPF, asks that the funds be constitutionally protected, is subject to a voter referendum every 10 years, and recommended a review of all existing user fees by the legislature five years after successful collection of the state sales tax, to continue every 5 years thereafter.

The Task Force fully supports funding the SGF & EDIF Fund obligation by the legislature during the 2017 session for the FY2018 and 2019 budget, or until the proposed sales tax revenue is successfully collected.

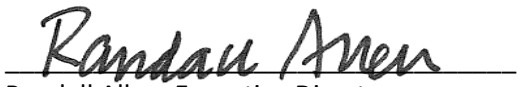
		Based on 2011-2015 Average Usage					
		Current			Proposed		
	Units	Fee		Revenue Generated	Fee		Revenue Generated
Municipal Fees	¢ / 1000 Gal	3	$	3,318,143	3	$	3,318,143
Industrial Fees	¢ / 1000 Gal	3	$	1,095,350	3	$	1,095,350
Stockwater Fees	¢ / 1000 Gal	3	$	374,448	3	$	374,448
CDWFF	¢ / 1000 Gal	3	$	2,998,235	3	$	2,998,235
Irrigation Use Fee	¢ / 1000 Gal	0	$	-	0	$	-
Irrigation Use Fee	$/ Af	0	$	-	0	$	-
Fertilizer Fees	$ / Ton	1.4	$	3,416,703	1.4	$	3,416,703
Sand Royalties	$ / Ton	0.15	$	100,873	0.15	$	100,873
Pesticide Fees	$ / License	100	$	1,202,420	100	$	1,202,420
Sales Tax	%	0.0%	$	-	0.1%	$	43,397,814
Bottled Water Fee	¢ / Bottle	0	$	-		$	-
Electric Generation	¢ / MwH	0	$	-		$	-
Electric Residential	¢ / KwH	0	$	-		$	-
Watershed Reservoirs	¢ / 1000 Gal	0	$	-		$	-
Rec/Hunting Marsh	¢ / 1000 Gal	0	$	-		$	-
Sand/Gravel Pit Evap	¢ / 1000 Gal	0	$	-		$	-
Total SWPF Fees			$	12,506,172		$	55,903,986

Oversight

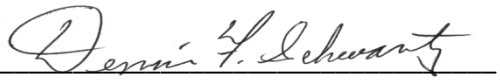
The Task Force agreed that the KWA should continue to act as they do now as the body that recommends appropriation amounts from the SWPF money. The KWA would be tasked with working with the Regional Advisory Committees to determine regional priorities, and look to distribute some of the fees collected back to the region they came from. A continual review of Vision and statewide priorities will be necessary.

Through additional discussion, membership of the KWA was brought to the table as worthy of review by the Legislature. Some Task Force members expressed concern that a large percentage of payers, such as those in large metropolitan areas, were not guaranteed equal representation on the KWA with the current appointment breakdown. The Task Force took action to recommend to the Legislature and the KWA to look at the statute relative to the makeup of the KWA, and seek to include demographic and user fee participation as guidelines for representation and appointments.

Respectfully Submitted,



Randall Allen, Executive Director
Kansas Association of Counties



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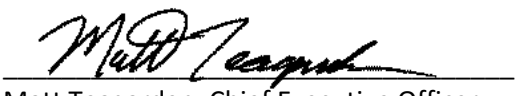
Westar Energy



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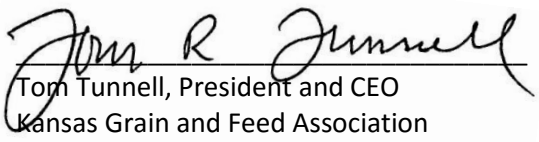
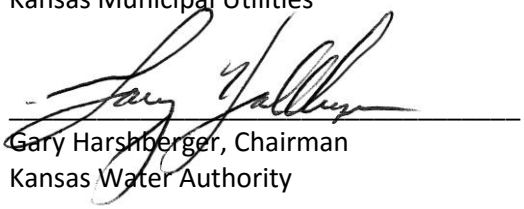
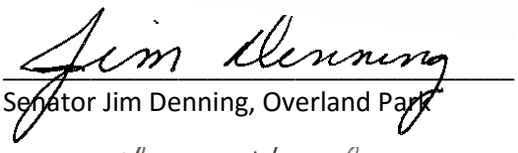


Tom Tunnell, President and CEO
Kansas Grain and Feed Association



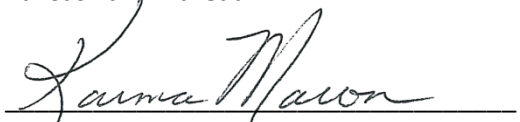
Gary Harshberger, Chairman
Kansas Water Authority



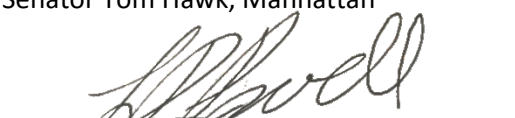
Senator Jim Denning, Overland Park

Terry Holdren, Chief Executive Officer
Kansas Farm Bureau

Senator Tom Hawk, Manhattan

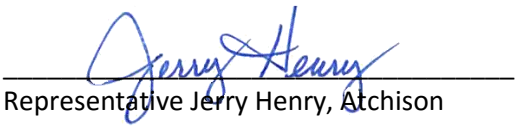


Karma Mason, Member
Kansas Chamber

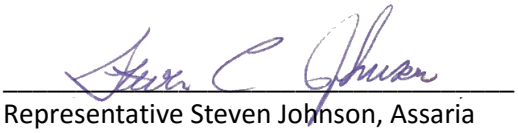


Senator Larry Powell, Garden City

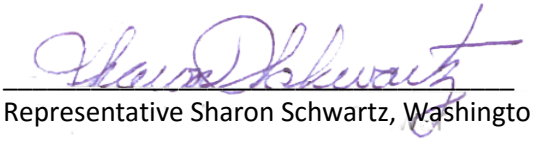
Erik Sartorius, Executive Director
League of Kansas Municipalities



Representative Jerry Henry, Atchison



Representative Steven Johnson, Assaria



Representative Sharon Schwartz, Washington

Appendix

a. Powerpoint of Funding Demands presented by Agencies and Public Input
b. Revenue fee table with proposal
c. Background information on bottled water fee
d. October 31, 2016 meeting minutes
e. KWA Memo to Task Force
f. Maps presented to Task Force

June 16, 2016

BLUE RIBBON FUNDING TASK FORCE

KNOWN FUNDING DEMANDS UPDATED

Vision for the Future of Water Supply Implementation Costs - $45,900,000

	Water Conservation	Water Management	Technology and Crop Varieties	Additional Sources of Water
Research		$300,000	$3,000,000	$500,000
Education and Outreach	Presented at April Meeting			
Actions and Practices	$22,000,000	$100,000	$1,500,000	$17,500,000
Administration	Should agency administration be paid from implementation funds?			
Total	$22,000,000	$400,000	$4,500,000	$19,000,000

Vision for the Future of Water Supply Implementation Costs - $50,050,000

	Water Conservation	Water Management	Technology and Crop Varieties	Additional Sources of Water
Research		$300,000	$3,000,000	$500,000
Education and Outreach	$4,250,000			
Actions and Practices	$21,900,000	$100,000	$1,500,000	$17,500,000
Administration	Should agency administration be paid from implementation funds?			
Total	$26,150,000	$400,000	$4,500,000	$19,000,000

Public Input Funding Needs

Not Included in Previous Known Demands

Technology and Crop Varieties

Technology and Crop	Action	Cost
Research	Research & develop wastewater treatment technologies which provide water quality and quantity suitable for livestock consumption to promote reuse of wastewater generated by livestock facilities.	$1,000,000
	Research & develop sensors, control, and mechanical devices that will reliably control and limit wintertime overflows from livestock water supply tanks.	$500,000
Education and Outreach	Extension Systems Ag Research Programs	$5,000,000
Actions and Practices		
Administration		
Total		**$6,500,000**

Vision for the Future of Water Supply Implementation Costs - $56,550,000

	Water Conservation	Water Management	Technology and Crop Varieties	Additional Sources of Water
Research		$300,000	$4,500,000	$500,000
Education and Outreach	$4,250,000		$5,000,000	
Actions and Practices	$21,900,000	$100,000	$1,500,000	$17,500,000
Administration	Should agency administration be paid from implementation funds?			
Total	$26,150,000	$400,000	$11,000,000	$19,000,000

*Does not include all actions from plans being developed by Regional Advisory Committees

Water Conservation Costs

Water Conservation	Action	Cost
Research		
Education and Outreach	Strategic Education Plan	$ 4,250,000
Actions and Practices		
	Implementation of Best Management Practices	$ 15,500,000
	Streambank Stabilization	$ 5,000,000
	Construction of Watershed Dams	$ 1,000,000
	CREP Implementation	$ 400,000
Administration		
Total		**$ 26,150,000**

Water Management

Water Management	Action	Cost
Research		
	Kansas River Stream Aquifer Model	$ 160,000
	Kansas River Alluvial Index Well Network	$ 40,000
	Kanapolis Reallocation Feasibility Study	$ 100,000
Education and Outreach		
Actions and Practices		
	Planning & Technical Assistance for PWS	$ 100,000
Administration		
Total		**$ 400,000**

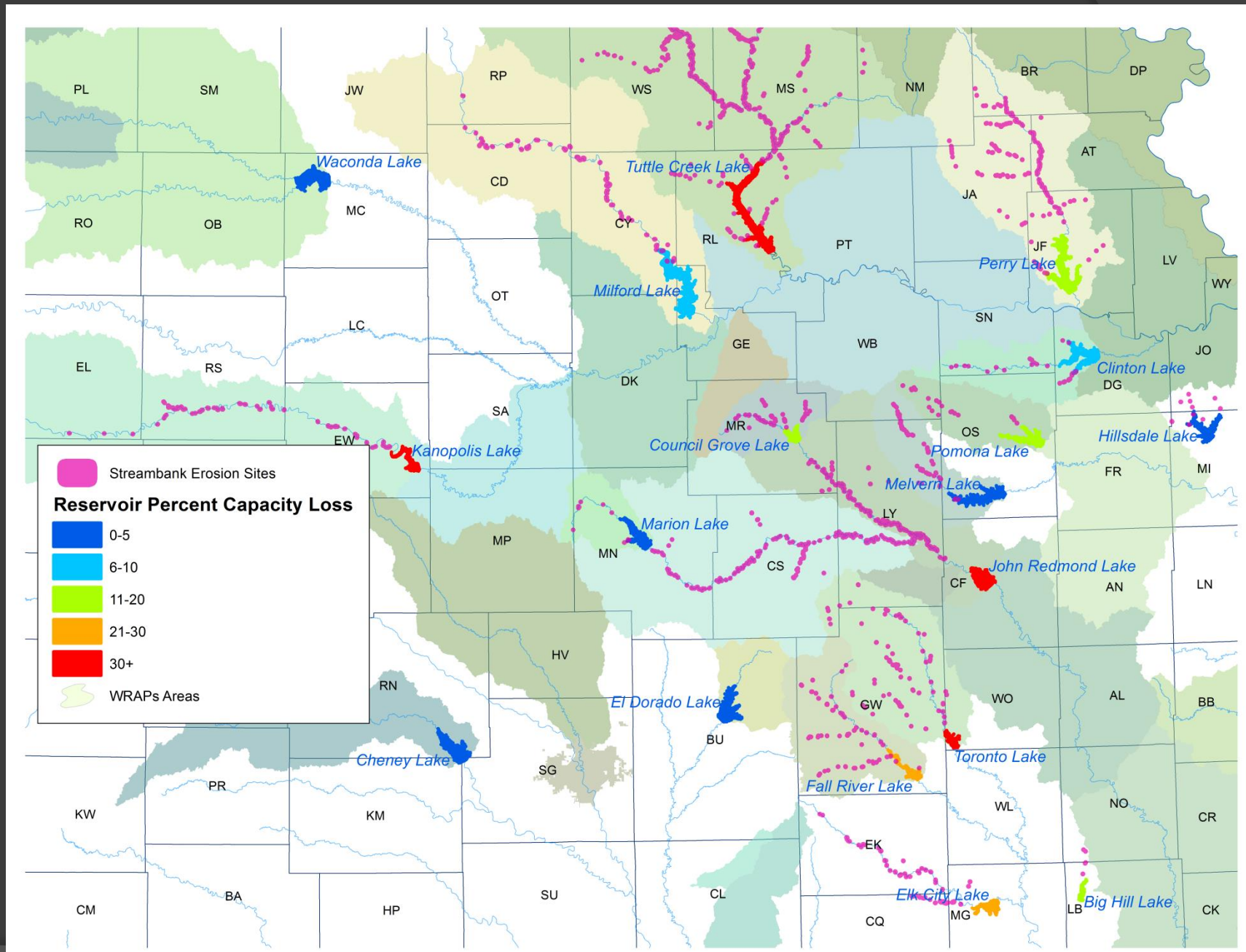
Technology and Crop Varieties

Technology and Crop	Action	Cost
Research	Stream Gaging Network	$ 500,000
	LiDAR Aquisition	$ 60,000
	Bathymetric Surveys	$ 150,000
	Sediment Coring	$ 50,000
	In-stream Sediment Monitoring	$ 150,000
	Expand High Plains Index Well Network	$ 65,000
	Less Water Intensive Crop Research	$ 2,000,000
	Livestock Wastewater Treatment	$ 1,000,000
	Livestock Water Supply Tank Overflow	$ 500,000
Education and Outreach	Extension Systems Ag Research Programs	$ 5,000,000
Actions and Practices	Maintenance of hydrogeologic models	$ 25,000
	Irrigation Technology Adoption	$ 1,500,000
Administration		
Total		**$ 11,000,000**

Additional Sources of Supply

Additional Sources	Action	Cost
Research	Identify additional reservoir sites & Feasibility	$ 200,000
	Model to Assess Chloride Remediation of Equus Beds	$ 200,000
	Expand models of aquifers containing brackish water	$ 30,000
	Research Treatment of Lower Quality Water	$ 120,000
Education and Outreach		
Actions and Practices	Call into service storage at Milford and Perry	$ 3,322,269
	Construct MPSL reservoirs	$ 2,000,000
	Minimum Pool Agreements in the Solomon-Republican	$ 100,000
	Sediment Removal	$ 10,000,000
	Nitrate Removal/Remediation in PWS	$ 2,000,000
	Projects to remediate brackish water	$ 1,000,000
Administration		
Total		**$ 18,972,269**

Questions?


Streambank Erosion Sites
Reservoir Percent Capacity Loss
0-5
6-10
11-20
21-30
30+
WRAPs Areas
Waconda Lake
Tuttle Creek Lake
Milford Lake
Perry Lake
Clinton Lake
Kanopolis Lake
Council Grove Lake
Pomona Lake
Hillsdale Lake
Melvern Lake
Marion Lake
John Redmond Lake
El Dorado Lake
Cheney Lake
Toronto Lake
Fall River Lake
Elk City Lake
Big Hill Lake
PL
SM
JW
RP
WS
MS
NM
BR
DP
AT
RO
OB
MC
CD
CY
RL
PT
JA
JF
LV
WY
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WO
AL
BB
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MG
LB
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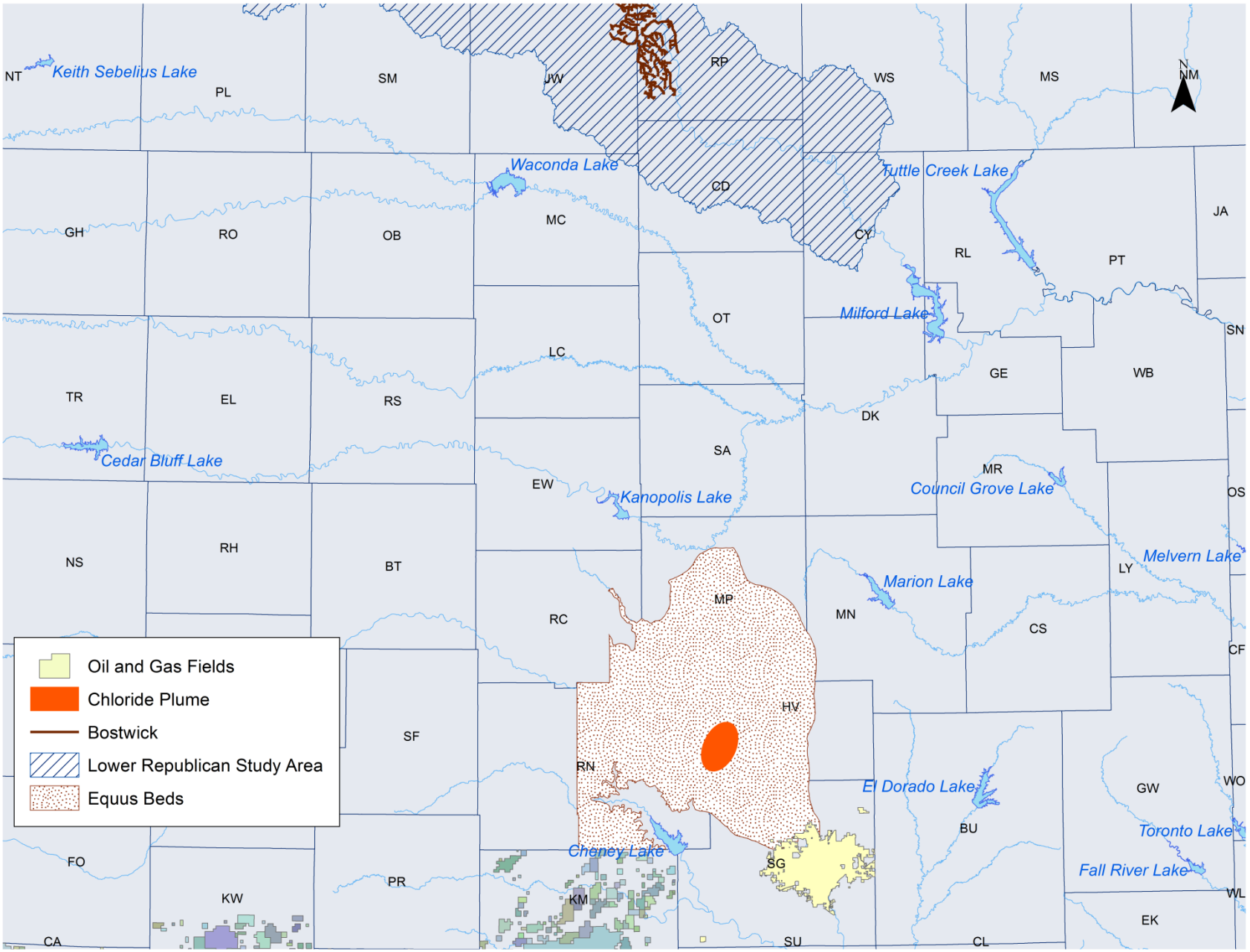
Keith Sebelius Lake
Waconda Lake
Tuttle Creek Lake
Milford Lake
Cedar Bluff Lake
Kanopolis Lake
Council Grove Lake
Melvern Lake
Marion Lake
El Dorado Lake
Toronto Lake
Fall River Lake
Cheney Lake
NT
PL
SM
JW
RP
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CY
JA
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LC
SN
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TR
EL
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MR
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RH
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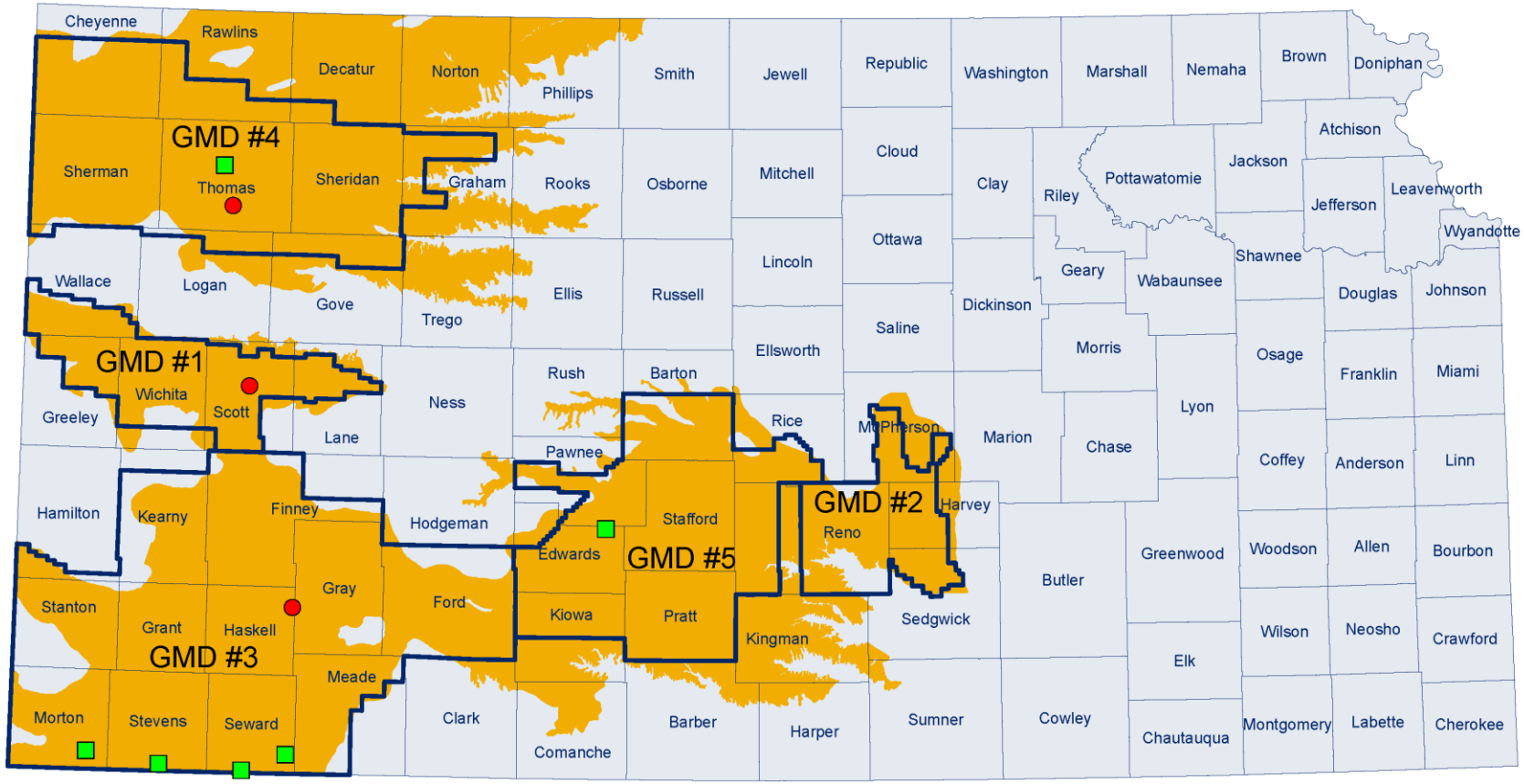
LY
MP
RC
MN
CS
CF
HV
SF
RN
GW
WO
BU
FO
PR
SG
KW
KM
WL
EK
CA
SU
CL
Oil and Gas Fields
Chloride Plume
Bostwick
Lower Republican Study Area
Equus Beds


Cheyenne
Rawlins
Decatur
Norton
Phillips
Smith
Jewell
Republic
Washington
Marshall
Nemaha
Brown
Doniphan
GMD #4
Sherman
Thomas
Sheridan
Graham
Rooks
Osborne
Mitchell
Cloud
Clay
Riley
Pottawatomie
Jackson
Atchison
Jefferson
Leavenworth
Wyandotte
Shawnee
Wallace
Logan
Gove
Trego
Ellis
Russell
Lincoln
Ottawa
Geary
Wabaunsee
Dickinson
Douglas
Johnson
GMD #1
Wichita
Scott
Greeley
Lane
Ness
Rush
Barton
Ellsworth
Saline
Morris
Osage
Franklin
Miami
Rice
McPherson
Marion
Chase
Lyon
Coffey
Anderson
Linn
Pawnee
Hamilton
Kearny
Finney
Hodgeman
Stafford
Edwards
GMD #5
GMD #2
Reno
Harvey
Butler
Greenwood
Woodson
Allen
Bourbon
Gray
Stanton
Grant
Haskell
Ford
Kiowa
Pratt
Kingman
Sedgwick
Wilson
Neosho
Crawford
GMD #3
Meade
Elk
Morton
Stevens
Seward
Clark
Comanche
Barber
Harper
Sumner
Cowley
Chautauqua
Montgomery
Labette
Cherokee

2011-2015 Average Usage

	Units	Fee	Current Revenue Generated	Proposed Fee	Proposed Revenue Generated	Impact Units	Current	Proposed		Total number of Units
Municipal Fees	¢ / 1000 Gal	3	$ 3,318,143	3	$ 3,318,143	Family of four	$ 0.45	$ 0.45	Monthly	614,471
Industrial Fees	¢ / 1000 Gal	3	$ 1,095,350	3	$ 1,095,350					
Stockwater Fees	¢ / 1000 Gal	3	$ 374,448	3	$ 374,448	1,000 Head of Cattle	$ 164.25	$ 164.25	Annual	
CDWFF	¢ / 1000 Gal	3	$ 2,998,235	3	$ 2,998,235	Family of four	$ 0.45	$ 0.45	Monthly	555,229
Irrigation Use Fee	¢ / 1000 Gal	0	$ -	0	$ -	125 Acre	$ -	$ -	Annual	25,350
Irrigation Use Fee	$/ Af	0	$ -	0	$ -	125 Acre	$ -	$ -	Annual	25,350
Fertilizer Fees	$ / Ton	1.4	$ 3,416,703	1.4	$ 3,416,703	125 Acre Irrigated Corn	$ 11.81	$ 11.81	Annual	
						125 Acre Dryland Corn	$ 4.81	$ 4.81	Annual	
Sand Royalties	$ / Ton	0.15	$ 100,873	0.15	$ 100,873					
Pesticide Fees	$ / License	100	$ 1,202,420	100	$ 1,202,420					
Sales Tax	%	0.0%	$ -	0.1%	$ 43,397,814				Annual	
Bottled Water Fee	¢ / Bottle	0	$ -		$ -	Individual	$ -	$ -	Annual	
Electric Generation	¢ / MwH	0	$ -		$ -					
Electric Residential	¢ / KwH	0	$ -		$ -	Residential Customer	$ -	$ -	Monthly	1,228,858
Watershed Reservoirs	¢ / 1000 Gal	0	$ -		$ -					
Rec/Hunting Marsh	¢ / 1000 Gal	0	$ -		$ -					
Sand/Gravel Pit Evap	¢ / 1000 Gal	0	$ -		$ -					
Total SWPF Fees			$ 12,506,172		$ 55,903,986					

Blue Ribbon Funding Task Force for Water Resource Management
Bottled Water Fee – Additional Information
Source: Kansas Department of Revenue

Definition of "Bottled Water"

According to the Streamlined Sales and Use Tax Agreement (SSUTA), "bottled water" means "water that is placed in a safety sealed container or package for human consumption. Bottled water is calorie free and does not contain sweeteners or other additives except that it may contain: (i) antimicrobial agents; (ii) fluoride; (iii) carbonation; (iv) vitamins, minerals, and electrolytes; (v) oxygen; (vi) preservatives; and (vii) only those flavors, extracts, or essences derived from a spice or fruit. "Bottled water" includes water that is delivered to the buyer in a reusable container that is not sold with the water."

KDOR suggested two options that could be implemented and keep Kansas in compliance with SSUTA; assessing a unit tax on packages sold (cents/bottle) or assessing a gallonage tax on packaged water (cents/gallon).

Tax on packages Sold

Fee at Retail Level

Statute should specify whether the fee is imposed directly on the consumer or if it is imposed on the seller.

- On the seller it would be included in the sales price unless the statute authorizing or imposing the fee provides that the seller may, but is not required, to collect such tax from the consumer.
- If the fee is excluded from the sales price, the statute should require it to be separately stated on the invoice provided to the purchaser.

Fee at Wholesale Level

If the fee is imposed at the wholesale level, it is assumed that the fee would be included in the cost of the product to the retailer and included in the sale price.

Anticipated Revenues: [1]

Bottles/gallon	Bottles Used	Annual Revenue $0.01/bottle	Annual Revenue $0.04/bottle
4	425,099,586	$4,250,996	$17,003,983
5	531,374,483	$5,313,745	$21,254,979
6	637,649,379	$6,376,494	$25,505,975
7	743,924,276	$7,439,243	$29,756,971
8	850,199,172	$8,501,992	$34,007,967

Discussion points for fee imposed directly on consumer

[1] According to the International Bottled Water Association, U.S. per capita consumption of bottled water in 2015 was 36.5 gallons. With a Kansas population of 2.912 million, this equates to 106.3 million gallons of bottled water consumed in 2015. Since bottled water is sold in various sized containers, it is not clear how to determine how many bottles would be used per gallon of water. The table shows how many bottles would be consumed based on the number of bottles used per gallon of water.

- If the fee were imposed directly on the consumer, the retailer would need to modify its receipts to report the tax to the consumer. This would create a greater hardship on smaller retailers who may not have a sophisticated computer system to track such sales and taxes.
- Bulk sales and the use of refillable containers, such as home and office delivery services (ie. LindySpring and others), would need to be addressed.
    - Would all containers be taxed, or only those containers within a certain size range?
    - Would all sized containers be taxed at the same rate? This may lead to a perceived unfairness by the consumer. For example, with a $0.04/bottle tax, a 24 pack of 16.9 ounce bottles would be taxed at $0.96. A 24 pack of 16.9 ounce bottles contains about 3 gallons of water. Purchasing the same 3 gallons of water in one gallon containers would only bear a $0.04/bottle tax of $0.12.
- Consumer concern may also arise from a bottle tax being applied to bottled water but not to other beverages sold in similar containers.

Gallonage Tax

If a gallonage tax were imposed, the following table shows potential revenues at various tax thresholds.

Cents/Gallon	Annual Revenue
$0.01	$ 1,062,749
$0.02	$ 2,125,498
$0.03	$ 3,188,247
$0.04	$ 4,250,996
$0.05	$ 5,313,745
$0.10	$ 10,627,490
$0.15	$ 15,941,234
$0.20	$ 21,254,979
$0.25	$ 26,568,724
$0.30	$ 31,882,469
$0.35	$ 37,196,214

A gallonage tax may be less problematic since it would be assessed on a wholesale level. It is anticipated that it could be implemented in a similar fashion to the existing gallonage tax on liquor.

Meeting Minutes of the Blue Ribbon Task Force for Water Resource Management
October 31, 2016, 1:00 p.m.

The Blue Ribbon Funding Task Force for Water Resource Management (Task Force) met on October 31, 2016, at 1:00 p.m. in the Kansas Soybean Association Board Room.

Members present were: Terry Holdren, Kansas Farm Bureau; Aaron Popelka, Kansas Livestock Association (representing Matt Teagarden); Tom Hawk, Kansas Senate; Colin Hanson, Kansas Municipal Utilities; Karma Mason, Kansas Chamber; Larry Powell, Kansas Senate; Gary Harshberger, Kansas Water Authority; Jim Denning, Kansas Senate; Steven Johnson, Kansas House; Eric Sartorius, League of Kansas Municipalities; Tom Tunnell, Kansas Grain and Feed Association; Rob Reschke, Kansas Department of Agriculture (representing Secretary Jackie McClaskey); Gary Mason, Kansas Department of Health and Environment (representing Secretary Susan Mosier); Tracy Streeter, Kansas Water Office; Brad Loveless, Westar Energy (representing John Bridson); Dennis Schwartz, Kansas Rural Water Association.

Feedback

The Task Force began by reviewing the proposal last discussed at the September meeting, which was to designate one-tenth of one percent of existing state sales tax to the State Water Plan Fund (SWPF), and leave the existing user fees unchanged.

Kansas Water Authority (KWA) Chairman Gary Harshberger discussed the memo sent to the Task Force, emphasizing that the KWA stands ready to be the decision making body regarding disbursement of funds and prioritization of projects throughout the state. He also discussed the targeted funding for Vision implementation, and the coordination with Regional Advisory Committees on some funding being targeted to regions.

Also discussed was the Kansas Farm Bureau and the Kansas Livestock Association joint letter to the Task Force regarding the proposal. Kansas Farm Bureau agrees with the KWA being the entity to disburse and oversee the funding, but would like to see more emphasis on public-private partnerships, especially in the education area, in order to best leverage funds. They do not support the establishment of an irrigation user fee. Additionally, the State should meet its statutory obligation and transfer $6 million from the State General Fund to the SWPF. Kansas Livestock Association agreed with what Kansas Farm Bureau discussed, and also expressed interest in seeing the stockwater user fee phased out, as the users do not see direct benefit from the SWPF, and are not asking for additional services.

Dr. Ken Kriz, Wichita State University, presented the analysis of the user fees and sales tax generation being done and indicated he will be providing updates to the Task Force as they become available.

Deliberations

The discussion kicked off with the total revenue proposal, and the Task Force came to the consensus that the number of roughly $55 million in total for the SWPF is appropriate. This allows flexibility for large expenditures, such as purchase of Future Use Storage at reservoirs, while allowing the KWA to act as the entity to prioritize projects and Vision-related funding items. Also discussed were options for protecting the funds from being used for something else in the state budget.

Gary Harshberger moved to approve the request for one-tenth of one percent of existing sales tax marked for the SWPF, constitutionally protected, keeping the existing fee structure paid by water users. The motion was seconded by Terry Holdren.

Aaron Popelka amended the motion to add a mandatory sunset of all user fees to occur five years after sales tax collections begin, and implement a 10 year referendum on the sales tax by voters. The amendment was seconded by Larry Powell. The Amendment failed.

Gary Harshberger modified his original motion to state that the proposal recommend one-tenth of one percent sales tax marked for the SWPF, it is constitutionally protected, subject to a voter referendum every 10 years, and recommend a review of all existing user fees by the legislature five years after successful collection of the state sales tax, to continue every 5 years thereafter. The motion was seconded by Brad Loveless. The motion passed, with Karma Mason abstaining.

Terry Holdren moved to fully support funding the State General Fund & EDIF Fund obligation by the legislature during the 2017 session for the FY2018 and 2019 budget, or until the proposed sales tax revenue is successfully collected. The motion was seconded by Dennis Schwartz. The motion passed.

Oversight of Funding

The Task Force agreed that the KWA should continue to act as they do now as the body that budgets the SWPF money. Senator Denning stated that he would support the membership of the KWA to be evaluated. KWO staff provided a breakdown of the current membership appointment process of the KWA. The Task Force agreed that the legislature could offer some additional guidance on membership, such as geographic representation, fees paid, demographics, etc.

Terry Holdren moved to recommend to the Legislature and the KWA to look at the statute relative to the makeup of the KWA, and seek to include demographic and user fee participation as guidelines for representation and appointments. The motion was seconded by Aaron Popelka. The motion carried.

Regional Spending

Senator Powell moved to make a note in the Task Force report that the KWA should seek to establish a geographic expenditure of fees paid by each region, and should use the information provided by Wichita State University to make that happen. The motion was seconded by Gary Harshberger. The motion carried.

Report

The report of the Task Force will be drafted by KWO staff and distributed to members for review. There will be a presentation at the Governor's Conference on the Future of Water in Kansas on November 14th highlighting the work and the proposal of the Task Force.

Future Meetings

Future meetings of the Task Force will be decided on at a later date, pending completion of the report.

MEMO

Kansas Water Office
900 SW Jackson Suite 404
Topeka, KS 66612
Phone: (785) 296-3185
Fax: (785) 296-0878
www.kwo.org

DATE: October 26th, 2016
TO: Blue Ribbon Funding Task Force
FROM: Gary Harshberger and Karma Mason
RE: BRTF Funding and Vision Implementation

The Kansas Water Authority (KWA) met on October 19th and discussed the KWA leadership and decision making on the Vision Implementation Funding. Primary topics of the discussed included:

1. Kansas Water Authority and Blue Ribbon Funding Task Force roles
2. Funding target for use in Task Force Discussions
3. Dedicating a portion of future funding to regional areas
4. Information needed to support future requests

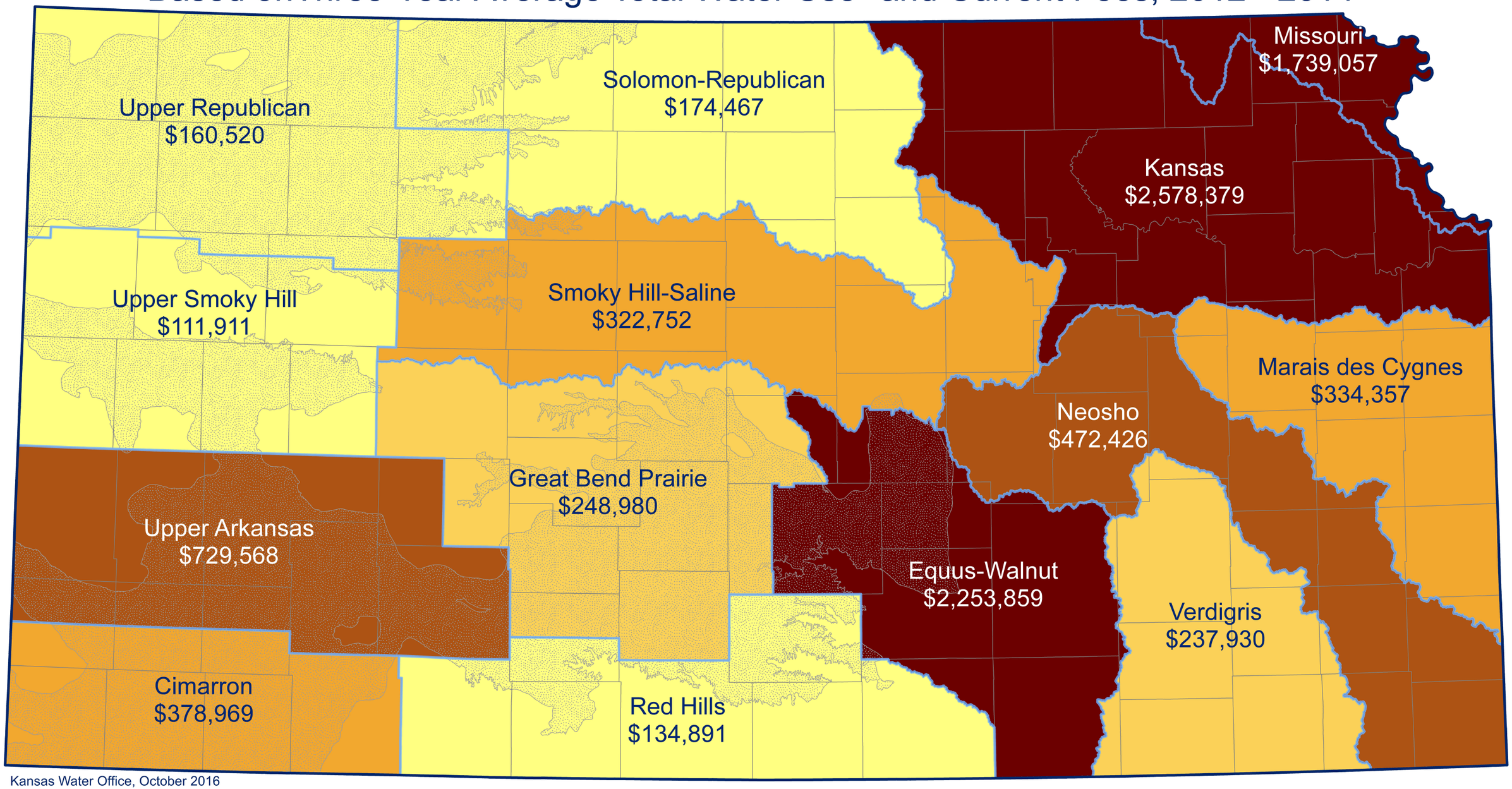
The consensus of the members was that since the KWA is the standing statutory body, the board should retain budget recommendation responsibility for water plan and vision implementation funding. This would include recommendations associated with any additional funding developed through the Blue Ribbon Funding Task Force.

Also discussed was the target funding for the Vision implementation. The KWA reviewed and discussed the Vision implementation spreadsheet provided to the Task Force at their last meeting. The KWA approved the overall funding target of approximately $55 million as the level that would be required on an annual basis to implement the Vision and associated regional goal action plans. It is recognized that the projects that will be funded will vary from year to year, but the overall need will remain the same. Focusing funding to the highest priority projects and reprograming funding once projects are completed will be key in maintaining credibility of the Vision process and the KWA's role in budgeting.

While there was not complete consensus, the general discussion by the KWA members was in support of some funding being targeted to regions. In any case, if funding is dedicated to regional activities, it should be guidance provided by the Regional Advisory Committees (RACs) to the KWA rather than be defined in statute. Further, the funding dedicated to a particular region would best be that which is associated with the fees that were derived in that region.

The KWA Budget Committee tasked the Kansas Water Office, in coordination with other agencies, with the goal of developing Project Sheets with detail to be included along with the Annual Report. The Kansas Water Office along with the other agencies will provided a comprehensive program analysis including program objectives, proposed activities, additional funding sources and consequences of not funding. Included in the detail would be RAC action plans, success stories and best management practice. The Program Analysis and associated 5 year Vision implementation budget proposal will be presented at the December KWA meeting and submitted in the Annual Report to the Governor.

Kansas Water Plan Fund Revenue by Regional Planning Area
Based onThree-Year Average Total Water Use* and Current Fees, 2012 - 2014



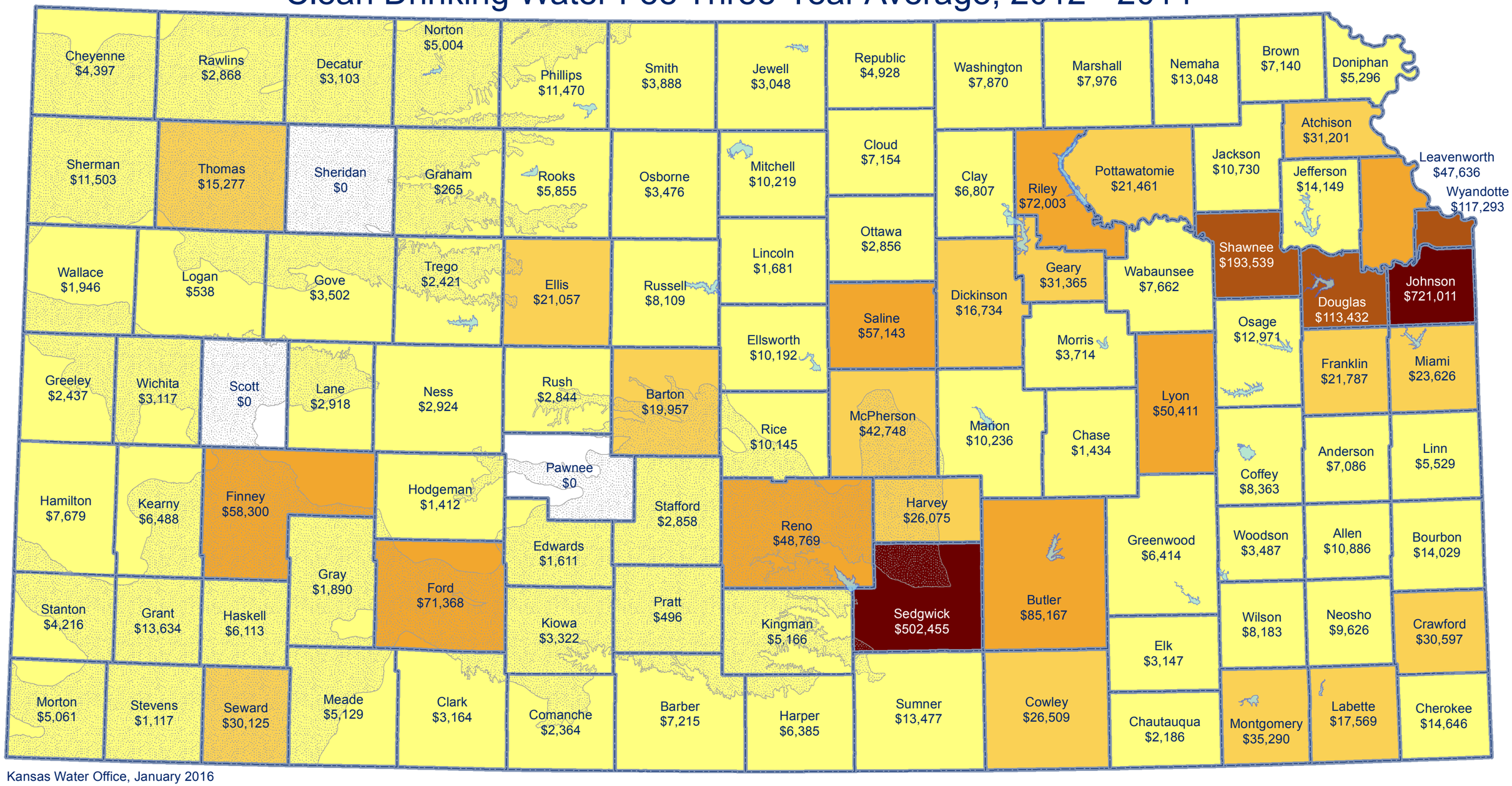
Kansas Water Office, October 2016

Average Revenue 2012-2014

- Less than $200,000
- $200,001 - $250,000
- $250,001 - $400,000
- $400,001 - $1,000,000
- More than $1,000,000

*Industry, Municipal, Clean Drinking Water and Stock Water fee of 3 cents/1,000 gallons. Regional calculation based on point of diversion.

Kansas Water Plan Fund Revenue by County
Clean Drinking Water Fee Three-Year Average, 2012 - 2014



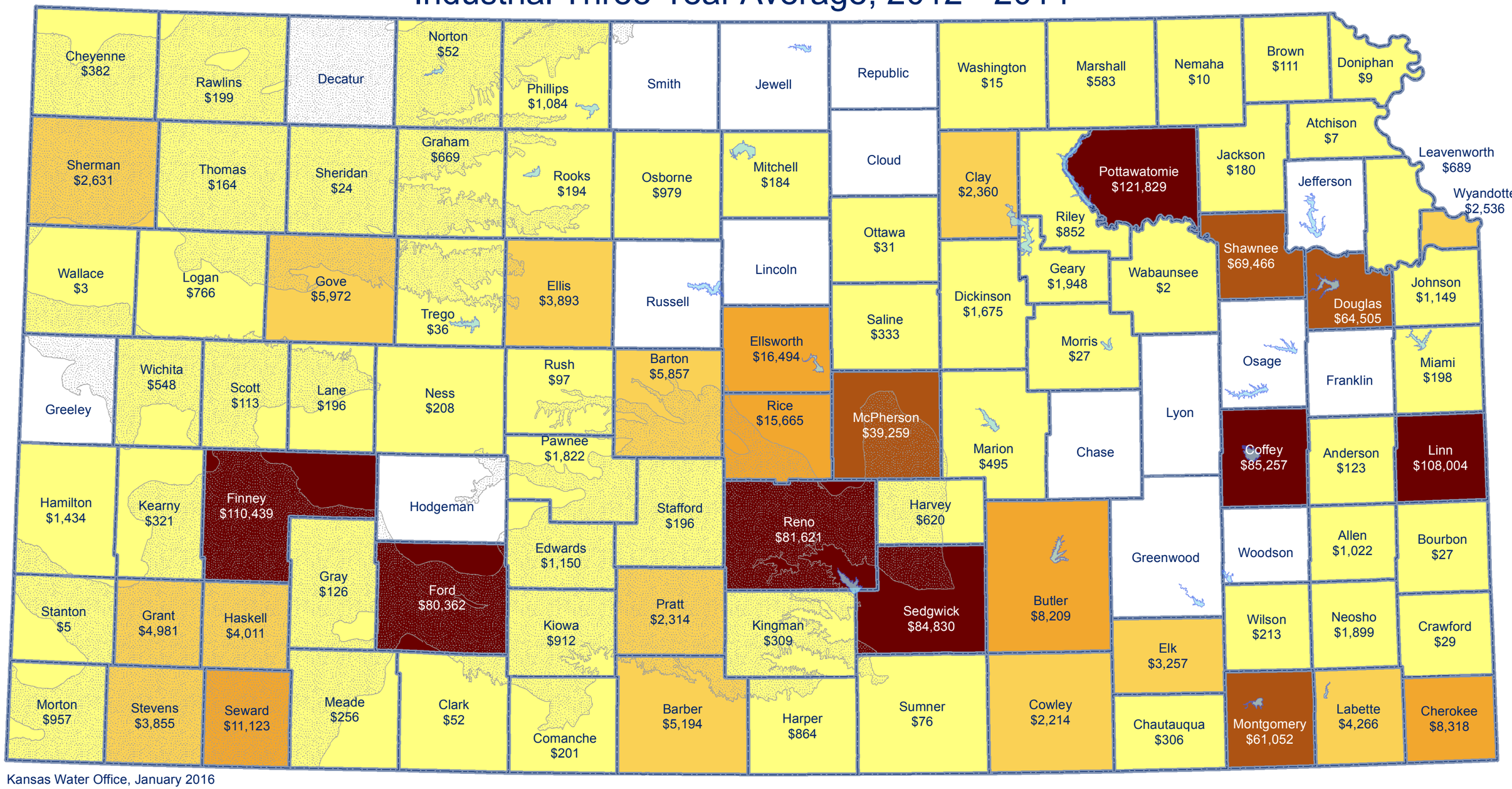
Kansas Water Office, January 2016

Federal Lake
County
HighPlains

Average Revenue 2012-2014

Less than $15,000
$15,000 - $45,000
$45,001 - $100,000
$100,001 - $200,000
More than $200,000

Kansas Water Plan Fund Revenue by County
Industrial Three-Year Average, 2012 - 2014



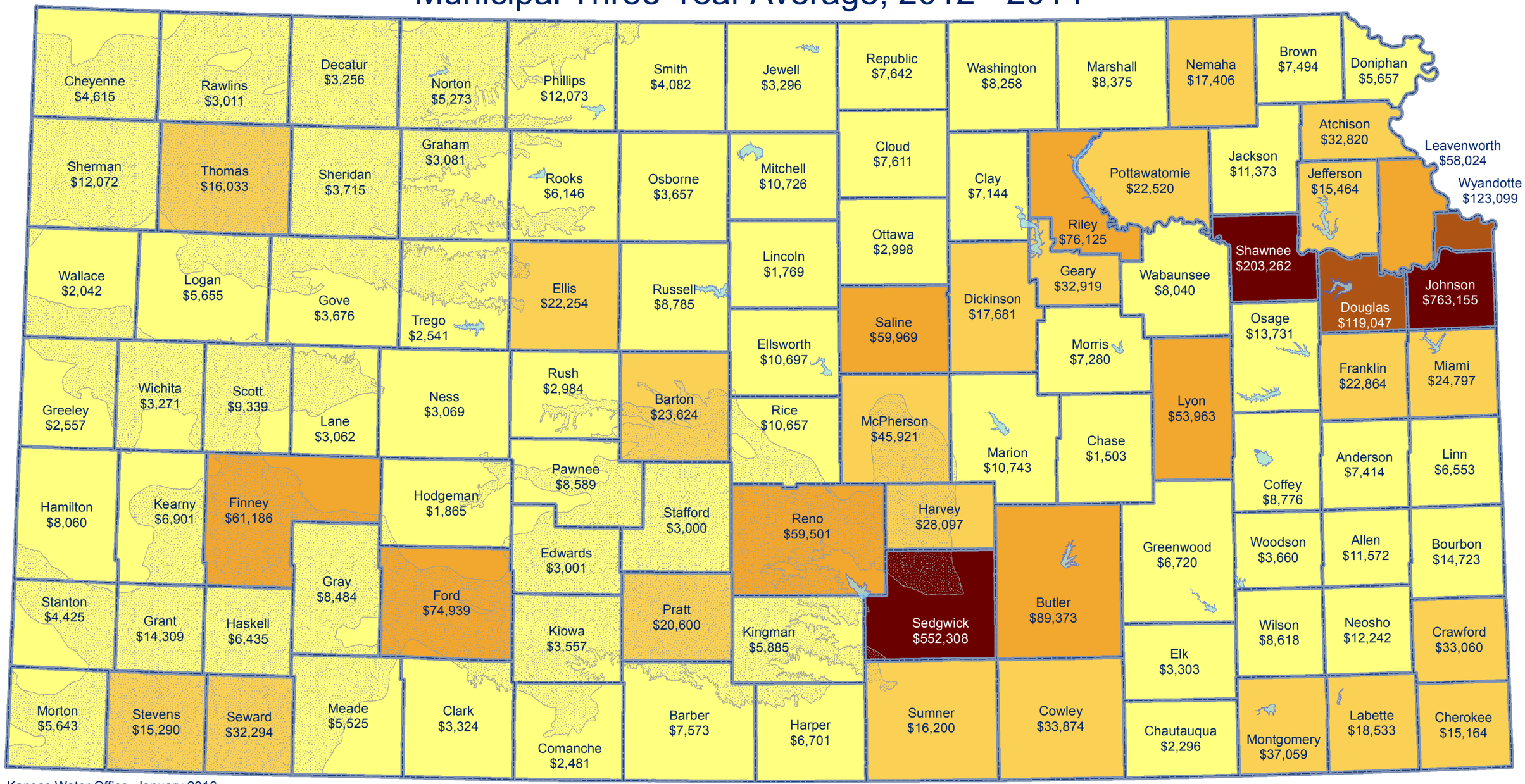
Kansas Water Office, January 2016

Federal Lake County HighPlains

Average Revenue 2012-2014

Less than $2,000 $2,000 - $6,000 $6,001 - $16,500 $16,500 - $80,000 More than $80,000

Kansas Water Plan Fund Revenue by County
Municipal Three-Year Average, 2012 - 2014



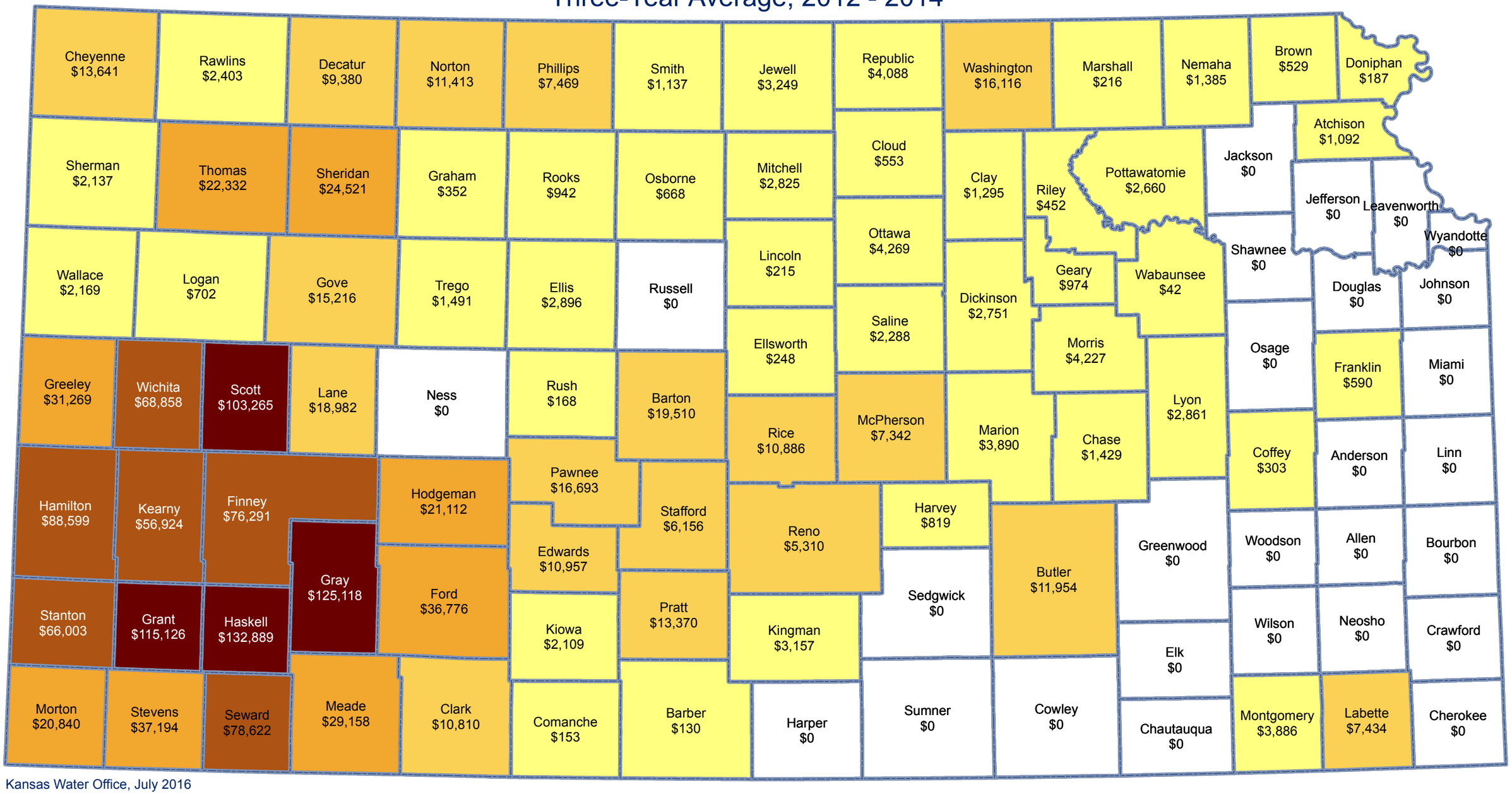
Kansas Water Office, January 2016

Federal Lake
County
HighPlains

Average Revenue 2012-2014

Less than $15,000
$15,000 - $50,000
$50,001 - $100,000
$100,001 - $200,000
More than $200,000

Potential Stockwater Revenue for the Kansas Water Plan Fund
At 10 Cents per 1,000 Gallons Water Use by County
Three-Year Average, 2012 - 2014



Kansas Water Office, July 2016

Average Revenue 2012-2014 DWR gallons

- Less than $5,000
- $5,001 - $20,000
- $20,001 - $50,000
- $50,001 - $100,000
- More than $100,000